ATTERACT FURMISHINGS

reclusive furnishings report on top U.S. turbine fransports . . . page 25

MERICAN AVIATION



PRODUCTION PAYOFF—One after another in steady procession, Fairchild's F-27 twin propjet airliners are rolling off the assembly line, moving into flight test, taking to the air. And in a few short weeks, this parade will stretch from coast to coast as local airlines begin to take delivery of these fast jet age transports. The F-27, first American-built propjet to become operational, is the pacesetter in ushering in a new era of luxurious limousine comfort for millions of passengers flying Main Street air routes of the nation. FAIRCHILD ENGINE & AIRPLANE CORPORATION,

Hagerstown 15, Maryland.

Partners in Comfort



HARDMAN Seats

CHOICE OF MORE THAN TO WORLD AIRLINES

When passengers take to the airlanes in the new Boeing 707 they will experience a new standard of luxury in air travel. They will streak through the sky at more than 600 miles an hour in a quiet, vibration-free cabin. They will relax in comfortable seats designed for the jet age. For

the past several years Hardman has been a "partner in comfort" with Boeing, developing new seating concepts for America's first jet airliner mock-ups in New York and Seattle. Today Hardman is busy on custom designs for its many airline customers who soon will fly the Boeing 707.

HARDMAN TOOL & ENGINEERING CO. . 1845 S. BUNDY DRIVE . LOS ANGELES 25, CALIFORNIA

Circle No. 11 on Reader Service Card.



Sea Legs for "Whirlybirds"

A helicopter, land-based, goes far out to sea on a rescue mission.

Another helicopter, owned by an oil company, roams the route of a pipeline, setting down on mountains and swamps for line inspection.

Both "whirlybirds" are amphibious. Their floats must keep them dry on water and level on rough terrain. Naturally, their floats must be dependable.

Dependability has long been an Air Cruisers specialty. It begins in the design stage, where Air Cruisers brings to bear the most advanced,

proved principles of good design. And it continues right through every stage of manufacture. For only with precision engineering and fine workmanship can dependability be achieved.

Air Cruisers' policy must work: our products have become standard throughout the helicopter and lightweight survival equipment fields.

Now added to the Air Cruisers products which serve industry are lightweight industrial plastics and radiation shielding...engineered and manufactured with the same care.



CORPORATION

AIR CRUISERS DIVISION

BELMAR. NEW JERSEY

LIFE JACKETS . LIFE RAFTS . HELICOPTER FLOATS . ESCAPE SLIDES . PACTON INDUSTRIAL PLASTICS . RADIATION SHIELDING

MAY 19, 1958

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3

Temco

AIRCRAFT DALLAS

..TITANIUM and TOMORROW





At Temco titanium is keeping its promises to the aircraft industry. No longer the intransigent metal, titanium in precision assemblies has become routine here. Through the development of Temco's Ti-Brite process, the tough titanium scale which once limited the material's usefulness is electrolytically removed without etching or disturbing the most precise dimensions.

And at Temco a successful process for chrome-plating titanium may be the major break-through in the feasibility study for extending its temperature resistance beyond the 800-1000°F range. Forming, spot welding, precision machining are everyday operations. Temco's proven capabilities in precision automatic fusion welding have proved especially effective in the assembly of titanium parts. A case in point: the front compressor casings of Pratt & Whitney's J-57 engine, produced at Temco.

Quality and reliability of assemblies produced at Temco are assured by the extensive facilities of the Quality Control Department and Metallurgical Laboratory. These include the newest non-destructive spectographic and large X-ray equipment.

Capabilities in advanced metallurgy . in titanium, aluminum, austenitic steel, stainless steel . . are typical of Temco progress. And now research and development capabilities are challenging the rare earths . . berylium, columbium, tantalum, molybdenum . . for tomorrow's needs. As the aircraft industry grows, so do Temco's capabilities to design, tool and produce for it. Whether your need is for a component, a subsystem or a complete system . . . an inspection of Temco will be informative and profitable.



CHALLENGE TEMCO...TODAY!

MAY

AMERICA AVIATION

WORLD'S LARGEST AVIATION PUBLISHERS

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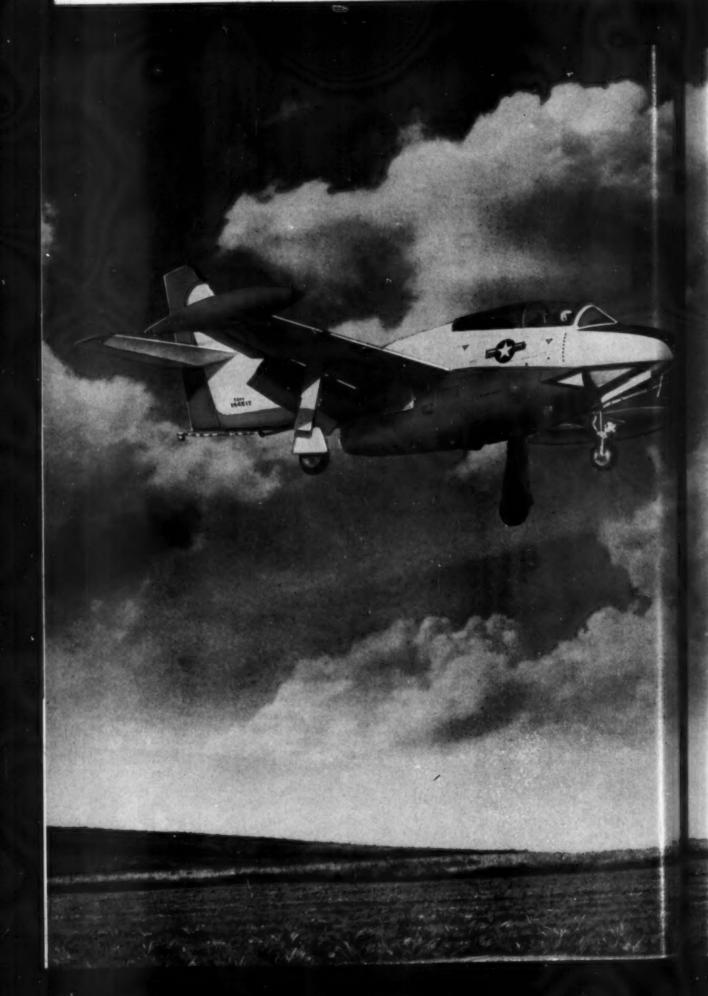
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Aircraft Data Cards . . . Second in this new AMERICAN AVIATION feature series includes photos and specifications of the Lockheed Electra and Fairchild F-27 turboprops and the McDonnell Model 119 utility jet. See card insert following page 70.

TION





Designed for Dependability

Newest trainer uses proven WESTINGHOUSE turbojet

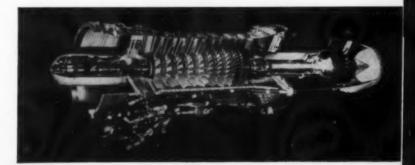
Within the last few weeks, the North American Aviation T2J-1 all-purpose jet trainer made its first flight at Port Columbus, Ohio. A Westinghouse J34 jet engine was the logical choice to provide the dependable power required for student pilots meeting the challenges of learning jet flight techniques.

The J34-WE-46 is an improved model of the basic J34 design which has accumulated over two million hours of actual flight operation. During this time, the engine has earned a reputation for combat reliability, serviceability and ease of maintenance. Its long overhaul life and high resistance to foreign object damage are further reasons why the J34 is an ideal power plant for workhorse-type applications.

The admirable service history of the J34 engine series proves the dependability of design, engineering and production at Westinghouse Aviation Gas Turbine Division, P.O. Box 288, Kansas City, Missouri.

Westinghouse





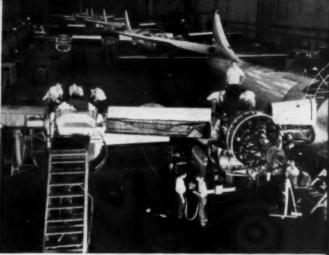
The Westinghouse J34-WE-46 will produce 3,400 pounds thrust to give the T2J-1 level flight speeds of at least 429 kt.



Electrical wiring.



Refueling reel pods for KB-50s.



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KB-50 modification in Bay 2.

DIVERSIFICATION



Infrared spectrophotometer.



Instrument overhout



Automatic welding missile fuel tank. Helicopter maintenance and overhaul.

The Hayes aircraft modification facility is a highly diversified operation. From design, manufacture and testing of aircraft structures, Hayes activities branch out into a multitude of ramifications involved in aircraft modification. For examples, these include:

Jet-augmenting tankers, missile work, infra-red research and production, instrument overhaul, design and manufacture of remote channel indicators, technical publication writing; design and production of electrical, electronic, hydraulic, and mechanical components and power plant systems; helicopter maintenance, fabrication of refueling wing-pods, research in aerodynamics. From wiring circuit design and installation to complete modification of multi-engine aircraft, Hayes has the facility and the skilled staff necessary for engineering, manufacturing, quality control and cost control in widely diversified work on aircraft.

Even the multiple bay design of the Hayes plant promotes diversified activities. Instead of a single lengthy production line in which different projects may interfere with each other, Hayes has 10 large production bays side-by-side, and diversified projects on various type planes never get in each other's way.

ENGINEERS, SCIENTISTS, NEEDED

Hayes is an aircraft modification, IRAN, and maintenance facility, including guided missile work. Good positions are open for aircraft design engineers, graduate engineering students, and aeronautical scientists. Write Personnel Director. Department 405, P.O. Box 2287.

ENGINEERS . DESIGNERS

MANUFACTURERS



Everybody's in Step Except Commerce

PENDING IN CONGRESS are bills which would extend the Federal Airport Act of 1946 for another five years and would provide an additional \$500 million of matching funds for airport development.

During the past twelve years under the Act, no more than \$430 million in federal funds has gone to airports, although Congress had intended

that more should have been spent.

It is a curious twist in federal airport aid that the very agency which is charged with overseeing aviation in this country has been the very agency dragging its feet on airport aid. This agency is the Department of Commerce. It has trimmed federal aid requests for some years.

And so it was recently when the Senate Interstate and Foreign Commerce Committee held hearings on the new airport bills. There were many who testified in favor. Only one witness testified in opposition. You guessed it—it was the Under Secretary of Commerce Louis S. Rothschild.

Not since Delos W. Rentzel was Under Secretary has there been the kind of progressive aviation leadership in the Commerce Department which should be forthcoming. Although Commerce has supported the federal airways program of CAA, almost everything else has been negative, whether it be permanent certification of carriers or capital gains or federal aid for airports.

Mr. Rothschild testified with something less than accuracy that the construction, maintenance and operation of civil airports "has always been a matter of local responsibility." Airports, he said, are community assets. The federal government, in his estimation, should look forward to curtailment of its contributions to airport development and improvement. In short, he opposed any extension of the Federal Airport Act.

It seems to us that Mr. Rothschild blithely ignored the one most important reason why the federal government should be directly concerned with the development of airports. They are part and parcel of a national transportation system. And since the beginning of the original Post Roads the federal government has been deeply and directly involved

in aid to transportation.

When railroad building was in its heyday, the government gave the rails land gifts amounting to cose to 10% of all land held in public domain in the United States. The government spends \$37 mil-In a year to keep inland waterways adapted to birges and in the present fiscal year will spend an a iditional \$67 million on waterway improvements. Federal aid to highways has totaled \$11.5 billion since 1917 and will total another \$37 billion in the 1 ext 20 years under the interstate highway program.

Federal aid to airports has been relatively

small, although the very substantial expenditures for the federal airways system for past, present and future must not be overlooked.

What may be lost sight of is the fact that the matching federal aid is not going to go to every airport in the country. As A. B. McMullen testified on behalf of the National Association of State Aviation Officials, there are about 7,300 airports in the country now, but of this total 4,640, or 63.5%. are privately owned and operated without any expense to any government agency or taxpayer. There are many community airports, particularly those not being served by scheduled carriers, which will not receive aid.

The vast bulk of the program is designed for those airports which are an integral part of the national transportation network—the interstate network which serves and benefits civil, commercial

and military on a national basis.

Thus these nationally-oriented airports are not in the class of local parks or schools, despite Mr. Rothschild's inclination to give them purely local status. John Wiley, of the New York Port Authority, testified that of the 13.5 million passengers using New York airports last year only 38% were residents of the N.Y./N.J. metropolitan area. R. F. W. "Bob" Schmidt, of Tucson, testified that transient movements at his airport are up 500% in-ten years while locally based aircraft are not yet doubled in number.

A NASAO survey indicates a requirement for \$1 billion in airport development during the next four years. Local funds are available for over half that amount. The pending bills in Congress would

authorize the remainder.

Local authorities are investing far more in airports than the federal government will ever do. In fiscal 1959, which starts July 1, the federal government will spend about \$63 million. But in 1957 alone the N. Y. Port Authority invested \$63 million and for 1958 \$107 million is budgeted, all for airport improvements.

Most important of all, however, is the needed recognition that federal aid is not money down the drain. It is not just an expenditure. It is an investment that will pay off in a great many ways. Airports are now big business creating new business. Miami International Airport, for example, provides 20% of all employment in Dade County-more than 200,000 persons are supported by the aviation industry there.

It is an unfortunate break for aviation that the Department of Commerce is negative, and not positive, in its entire attitude toward civil aviation.

Wayne W. Parrish

ETTERS

Engineers not needed?

Regarding your articles pertaining to the jet crew complement (AMERICAN AVIATION, April 7, 1958) I would like to interject a pilot's analysis of the situation conforming to the factors.

to interject a pilot's analysis of the situa-tion conforming to the facts.

At present I am a five-year co-pilot with Trans World Airlines and have a military background of 2,000 hours in jets, most of the time acquired in instruct-ing SAC crews in the T33 and B47s. This flight experience has shown me that only pilots are needed in the coming commer-

Mr. Petty states his reasons why an engineer should be required on the jet; none of them are valid. Just because we have an engineer aboard our prop air-craft (and rightly so) does not mean that

his services are required on jets. FEIA itself will pass out of existence with the props unless this union can put its engineers aboard the jets; thus the big struggle to sustain its life. To me this featherbedding" is a menace to my rightful job. Mr. Petty's only argument is that technological developments have taken a job away from his engineers and he needs a place for them.

An honest analysis of the duties of the third crew member shows that the qualifications needed are peculiar to the pilot group; consequently a conscientious engineer would certainly feel out of place and ineffectual in these duties. To say that the pilots can perform the trivial engineering jobs is certainly an insult to our intelligence. This would infer that pilots have been flying Martins and Con-

vairs in a haphazard and unsafe manner.

When the need for engineers on ground jobs is so great, why does the FEIA fight to put them where they are not needed? Apparently the fattened are not needed? paychecks they are negotiating for are worth more to them than integrity or

self-esteem.

to Management's job is whether it wants pilots or engineers on the jets. Anyone with jet experience will tell you there is no need for an engineer in jets, except to learn piloting at our expense. It is cheaper to hold on to the present junior co-pilot (the majority of whom are ex-jet pilots and have been educated at considerable cost by Uncle Sam) than to hire an engineer who is not required.

Mr. Petty, it seems, will try anything to place his prop-type engineers, in the coming jets at the expense of the pilot group, the safety of the traveling public and their own self respect. NAME WITH-HELD BY REQUEST.

Willing 'future millionaire'

In reference to your editorial, "Our ple's Factories," in the April 7 issue, congratulations on your stand to put more industry into the government.

My only fear is that you are campaigning for the big money boys already endowed with 33 of the 40-billion dollar defense appropriation so that they can reach out for that "whopping \$7 billion for maintaining our weapons once they come into inventory."

However, if you are campaigning for some of us average folks who are ready, willing, and eager to incorporate and run one of the "People's Factories" under a standard "Cost Plus Contract," then you have many future millionaires in your

May I be the first to volunteer to

operate one of these "People's Factories." The plan is simple:

1. The first five years would have to be under a cost plus 6% contract. Reason: The government operation of these establishments is too expensive so new production figures must be established as a basis for new contracts.

2. More people would be hired at higher salaries. Reason: The government cannot afford to compete with private industry for sufficient engineers and technicians.

3. The output schedule would be temporarily cut back. Reason: There would be a big changeover from Civil Service to private enterprise.

Note: The combination of a reduction in schedule and an increase in labor costs may tend to be inflationary but no one would call us "A carnival for state Besides that, our cost resocialism." ports would contain a "Fudge Factor" which would show our efficiency at 100% and enable us to show an improvement after each succeeding year.

4. New buildings would be constructed and new, modern equipment would be purchased during the first five years. Reason: The change in location would help explain the reduced schedule and it would only cost the government 6% more than it would, under present conditions, to scrap their existing facilities and purchase replacements.

5. After five years of operating under the above conditions, any type of contract could be written by the government pro-vided it used our past performance records for the basis of any calculations. Reason: By that time we would have our operating costs well padded, show an improve-ment each year by not holding back pro-duction as much as before, and operate with ingenious means of getting rid of good supervisors.

In other words, Dear Editor, we would pattern ourselves after existing companies working on government contracts. We would only make 6%, but the government would pick up the bills and we would make 6% on all of the government's money we could spend. Truly "A commissar's paradise." A. L. ARNOLD, O&R 642, NAS, Penascola, Florida.

Doesn't go for seaplanes

Your recent "Airtrend Note" commenting on the SeaMaster has caused me to challenge the actual usefulness ex-pected of the concept in today's Air World. Here is a list of facts on which I base my challenge. Let the seaplane proponents dispute them or furnish other than theories to prove that a military weapon of this type can be successful!

It is suggested that a comparison be made of the progress of landplane versus seaplane during any period since the airplane was invented. A graph would show a most favorable trend for the progress of the landplane. It would apply to any phase of operation plotted: range, speed, payload, operating costs, reliability and support.

What is the capability of the present military seaplane? It can fly a distance of 2,200 miles with a crew, fuel and a small payload. (PBYs could equal that 20 years ago.)

There isn't a seaplane operating today that can circumnavigate the globe in less than 30 days, and it would re-

RECORD-BREAKING

FLIGHTS OVER 1000 MILE

Both from the standpoint of operation economy and fast scheduling, the Viscount has proved itself the idea aircraft for 1000-plus-mile routes well as for considerably shorter one. Here are a few examples of regula long-distance Viscount "700" flights:



NEW SPEED RECORDS SET

Middle East Airlines' Viscounts recently broke two more speed records One of their Viscounts flew from Zurich to Athens in 3 hours, 7 minutes averaging 344 mph. Another made th Vienna to Istanbul hop in just 2 hours 50 minutes, flying at an average of 365 mph. These newest speed record are in addition to four others previously set by MEA Viscounts.



SAFARI, ANYONE?

Two new Viscount 810's are soon to go on safari in Africa! Airwork Ltd. has ordered the jet-prop planes for ferrying hunting parties deep in o the domain of the rhino and the wilde beest. It seems that no place on earth presents operating conditions too difficult for the dauntless Viscount!

VIC



FAST, SMOOTH, EASY TO HANDLE... CONTINENTAL'S NEW VISCOUNTS

"This new Viscount 810 handles like a dream", says Capt. George Miller, Chief Pilot for Continental Air Lines. "The Rolls-Royce Dart 525 jet-props are started by a fully automatic, timed cycle, simply by pushing a button and opening the fuel cock. These powerful engines require no warm-up or ground check. They can be opened up as soon

as the ship is ready on the runway. Acceleration is smooth and fast. Control response is crisp. Take-off and climb performance are outstanding. The Viscount behaves beautifully at any altitude—and can be taken up to 30,000′. Stability is remarkable—even in turbulence.

"You can tell that pilots had a lot to do with the layout of this cockpit. It's been

detail-designed with comfort and efficiency in mind. Window area is large, visibility excellent. Instruments and controls are grouped logically. The adjustable seats are especially comfortable. It all adds up to more enjoyable flying. This new jet-prop Viscount 810 is the best thing that's happened to pilots—and passengers—in many a year."

FROM THE WORLD LEADER IN JET-PROP AIRCRAFT ...

VICKERS VISCOUNT 81%40

VICKERS - ARMSTRONGS (AIRCRAFT) LTD. . WEYBRIDGE, ENGLAND . MEMBER COMPANY OF THE VICKERS GROUP

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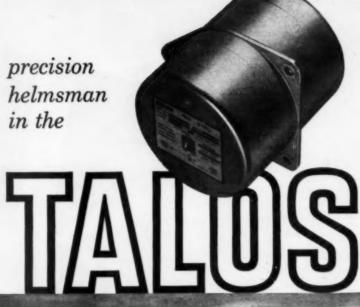
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GIANNINI FREE GYI





GIANNINI'S MODEL 3416 FREE GYROS MAN THE HELM IN THE NAVY'S TALOS. Mid-course guidance of the TALOS missile is achieved by riding a radar beam to the vicinity of the target. Immediately after launching, aerodynamic considerations require the missile to fly a straight and narrow path, maintaining constant attitude. Giannini Two-Axis Free Gyros have been piped aboard the TALOS to hold it "steady as she goes!"

Remotely Energized Electrical Cage-Uncage System

Low Drift during High Vibration

Unrestricted 360° Travel of Both Gimbals

Two Precision Potentiometer

Giannini measures & controls: PRECISION INSTRUMENTS AND CONTROLS Giannini P. TAS G. M. GIANNINI & CO., INC., 918 EAST GREEN STREET, PASADENA, CALIF. quire another 30 days to limited facilities along the route.

The seaplane can operate only a sheltered water bases, and then required the seapland because the seapland to the same area as the seaplane squadra and doing it more efficiently.) There no factual evidence that seaplanes operate effectively from the open as has been claimed.

What is the result of the expen development programs conducted dur

the last ten years?

The turboprop seaplane can
2,500 miles with fuel, crew and will title payload. The all-jet Sea Dart winsuccessful. The two experimental S Masters were failures.

When, then, will someone in thority decide that it is time to anal fully the proposals for military weapon and not be duped into spending exorb sums of money for outmoded sys

The SeaMaster will be obsolete to before it becomes an operational aplane. . . . NAME WITHHELD.

Thank you, Gen. Eaker

Congratulations to you and you organization on the Ninth Annual & Transport Progress issue of AMERICA AVIATION. I was particularly impressed with the wisdom and the able presention of the theme in your editorial "Reginning a New Era." This strong as yocacy of one of the prime problems in our industry is one of the things which reversely approach to the prime problems in our industry is one of the things which reversely approach to the prime problems in our industry is one of the things which reversely approach to the prime problems in the problems in t gives AMERICAN AVIATION the high regard and esteem it holds among all aviation leaders. IRA C. EAKER, Lt. Gen USAF (Ret.).

When & Where

MAY

Flight Safety Foundation regional business ein-craft safety seminar, Palmer House, Chicago, May 21-22.

May 21-22.

Aircraft Industries Assn., board of governors meeting, Williamsburg, Vo., May 21-23.

Aviation Writers Assn., annual convention, Shamrock Hilton Hotel, Houston, Tex., May

JUNE

Armed Forces Communications & Electronica Assn., convention, Sheraton-Carlton Hotel, Washington, D.C., June 4-6. Reading Aviation Service, annual maintenance and operations meeting, Municipal Airport, Reading, Pa., June 6-7. Annual Skylady Derby, June 12. (For details contact: Ruth Nickell, 904 Nickell Rd., Topeia, Kan.)

Air Mail Pioneers 40:h Anniversary Ball, Bererly Hilton Hotel, Beverly Hills, Calif., June 14.

14. Aviation Distributors & Manufacturers Ass. annual meeting, Mount Washington Hotel, Bretton Woods, N.H., June 25-27. AIEE transportation conference, Statler Hotel, Buffalo, N.Y., June 25-27.

JULY

JULY
County Airport, Pittsburgh, Pa., July 4-6.
Annual All-Woman Transcontinental Air Race,
San Diego to Charleston, S.C., July 4-8.
County Airport, Pittsburgh, Pa., July 4-6.
San Diego to Charleston, S.C., July 4-8.
County Air Race, Inc., 2611 E. Spring
St., Long Beach 6, Calif.)
National Air Races, Royal Aero Club, Baginton
Airport, Coventry, England, July 10-12.
Triennial inspection, NACA Ames Aeronautical
Lab., Moffett Field, Calif., July 14-15.
Assn. of Local & Territorial Airlines, queriety
regional meeting, Denver, Colo., July 24-5.
Aritine Electronics Engineering Committee
meeting, Cosmopolitan Hotel, Denver, July
29-31.

29-31. Society of America annual national contest, Bishop, Calif., July 29-Aug. 7. [For details contact: L. M. Licher, P.O. Box 6:971. Los Angeles 66.]

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BEARING FOR THE SPACE AGE—Creation of NORTRONICS, a Division of Northrop Aircraft, Inc., forms a unique combination of scientific knowledge, development techniques, and production experience spacifically required for the space age. As any long journey begins with a first step, so the conquest of space begins at sea level. Scientists and engineers of Nortronics, who created and developed the world's first successful automatic intercontinental guidance system for use within the earth's atmosphere, are now applying their knowledge and techniques on a broad front to interplanetary navigation. Daily, also, Nortronics is building "hardware," ranging from precisely-accurate guidance systems in assembly line production, through complete ground support equipment for modern missiles and ordnance. Nortronics' extensive experience, capabilities, and physical facilities are now supporting weapon systems manufacturers to provide "security with solvency" for the free world.



NORTHROP

240 CONVAIR

METROPOLITAN

and **NOW-** the Canadair

THE PROP

Newest Member in a Family of Greats!

The Canadair "540", turbine-powered with Napier-Eland engines, is the newest member of a great family of aircraft, and one that challenges any competitor on short and medium route patterns. And yet, with all its newness, the Canadair "540" still has behind it some 6,000,000 hours of operating experience gained on Convair "240's", "340's" and "440's" in airline and military operations all over the world.

By special arrangement, Convair has transferred to Canadair all "440" production tooling which makes possible an immediate establishment of the production line. First deliveries to the Royal Canadian Air Force will begin in July, 1959, building up to a delivery capacity of five per month.

In addition, Canadair takes over world-wide rights for all future production and sales of "540" turbo-props. Your inquiries are invited.

Check these important facts!

Speed: 325 mph. Payload: 13,800 lbs.

Seat mile cost: approx. 1.3-1.5¢

Rate of climb: 1200 fpm.

Seating: 48-54

Range: up to 1500 miles.

Runway: 4700 ft.

Operating altitude: 15,000-20,000 ft.



Limited, Montreal, Canada

• Aircraft • Guided Missiles • Research and Development • Nuclear Engineering CANADAIR IS A SUBSIDIARY OF GENERAL DYNAMICS CORPORATION

CASS-C: GG-85UST

AIRTRENDS

Odds are still better than 50-50 that this session of Congress won't enact legislation authorizing the reorganization of the Pentagon. Whatever bill comes from the House Armed Services Committee will be the subject of a floor fight. And the Senate hasn't started hearings yet. Basic fear is that the proposal represents a foot-in-the-door approach to a single military service. Congress wants to spell out limitations in detail. Some Senators see President Eisenhower's proposal as a demand for further delegation of Congressional power to the Executive.

Advanced Research Projects Agency won't come out of the argument with a whole skin. An effort will be made, particularly in the Senate, to clip the wings of the agency. It's being described as a type of British Ministry of Supply organization, which would further downgrade the military services and leave the country with many prototypes and no hardware if war came.

- Navy will follow USAF lead and buy some light, off-the-shelf aircraft. What kind and how many will depend on how much money the service can find. In the meantime, manufacturers are bringing their planes to Washington so that flying officers, with responsibility for the decision, can try them out.
- President Eisenhower's request for authority to transfer \$2 billion in 1959 defense funds between the military services is said to be getting the cold shoulder in House Appropriations Committee. Legislators reportedly will go along only with transfer approval of part of a \$500-million emergency fund requested by the President.
- Chances are even that two groups of contractors will get USAF and Defense Dept. nod to carry on for the time being with the big orbital bomber project (Dynasoar). Source Selection Board recommendations were presented to an executive session of the Air Council, but DOD and USAF Secretary must still approve. If decision goes to two teams, the Martin-Bell and Boeing-Chance Vought combinations are said to be among the front-runners.
- Important factor in decisions on new aircraft and engine competitions will be work loads of contractors. Other conditions being equal, contracts will go to companies with least amount of work, on a "share-the-wealth" basis.
- Slowness of decision-making is being blamed on the fact that there is still no general agreement in the Joint Chiefs of Staff as to what kind or kinds of war for which the U.S. must be ready. Corporate structure of JCS (which "doesn't operate on the basis of votes," according to Defense Secretary McElroy) is being blamed in part. However, whatever the reason, JCS is finding it tough under current economic conditions to be all things to all people. Result: a little is bought for almost any kind of a war and not enough for any one kind of trouble.
- McDonnell F4-H has been run at full power and put through taxi tests. First flight of the plane, which will be evaluated by the Navy as a long-range, carrier-based, all-weather interceptor, is expected during the week of May 19. The Chance Vought F8U-3, against which the F4-H will be evaluated, is due to fly in about a month. The competition tests the desirability of the one-place high performance fighter (F8U-3) against a two-place aircraft designed partially in answer to claims that there is too much in the cockpit for one pilot to handle.
- Decision in the competition for the 250-horsepower engine for the Army will be made within the next 10 days to two weeks. Air Materiel Command recommendations were scheduled to be submitted to the Army for final decision about May 15.

For late transport news and trends, see pages 55-58.

INDUSTRY At Deadline

Will the Pentagon Pay Its Bills?

- Why has Navy asked contractors to hold up bills for more than \$100,000?
- Will Navy and Air Force cut their airplane shopping list?
- How tight and how necessary are the expenditure ceilings?

Once more there are indications of an economic crisis brewing at the Pentagon. This time the first sign of real trouble comes from the Navy, which proudly maintained last summer "we will pay our bills."

Contractors are "volunteering", according to Navy sources, to carry all bills in excess of \$100,000 during the three-months' period which started last April 1 and which will end, the Navy hopes, on June 30. Reason for the trouble is the tight expenditure ceiling of about \$10.9 billion imposed on the Navy by the Bureau of the Budget to keep spending within the federal debt ceiling.

As a Navy spokesman explains it:
"An expenditure ceiling is extremely difficult to live with since no fiscal machinery exists, or can be devised to control expenditures precisely once obligations have been made."

Admiral Arleigh Burke, Chief of Naval Operations, described the effect of these limitations recently. He said:

"If the manufacturer delivers faster, the bills come faster, and we hit the stops of expenditure limitations. If we tell him to slow down or stretch out, he works less efficiently, and the cost goes up and our program becomes underfunded. Then if we cut the order to fewer items, the unit price rises and we're licked there, too. The disastrous part is that in each case the fleet is deprived of vitally needed equipment."

First choice would be to cut progress payments below the 80-20% figures fixed last summer in the first effort to bring cash expenditures down and to force contractors to carry part of their work in process inventories. However, the financial problems involved and the extra cost of financing will probably force the Pentagon to leave progress payments alone.

Second choice would be another stretchout. However, as reductions are made in scheduled deliveries, costs climb, as both the Navy and the Air Force discovered last summer. Additional difficulties stem from the fact that presently scheduled deliveries are in many cases short of the number needed to take care of normal attrition (i.e. losses resulting from accidents and obsolescence). Finally, this alternative prevents scheduled modernization from taking place, with the result that maintenance costs climb.

An example in point is the current decision to go through a substantial modernization with the B-47 medium bomber for which the B-58 Hustler is ultimately expected to be a substitute. The plane, according to informed sources, has already been pushed to design limits over the 10-year period since it first flew. It is now being asked to do something more, with the result that a substantial modernization program is being forced, where normally, the rate of the production of the B-58 would have been stepped up and the B-47 gradually phased out.

As a result, the Navy sees no alternative, if expenditure controls are not lifted, but to eliminate from its shopping list new planes not yet in quantity production. Planes affected would be such aircraft as the P6M Sea-Master; the F4H or F8U-3, now involved in a soon-to-be-decided competition between McDonnell Aircraft Company and Chance Vought, and the A3-J, now being built by North American Aviation at Columbus.

Strangely enough, the Air Force doesn't seem to be in the same degree of trouble as the Navy. Air Force's troubles if any won't show up until fiscal 1959 when it actually starts to buy fiscal 1959 aircraft. Its shopping list for fiscal 1959 won't be approved until the expenditure picture is clarified, with the result that at this time, AF hopes to "get by" and to be allowed to go ahead with its minimum "buy" program.

Frequency Fight

ODM victory could make civil equipment obsolete

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MAY I

A bitter struggle is shaping u between civil and military radio-nan gation planners over the future allocation of microwave frequencies.

On one side is civil aviation represented by Aeronautical Radio, Incand Air Transport Assn. On the other is the Office of Defense Mobilization In the middle is the Federal Communications Commission.

The point of discussion: FCC Document No. 58-379 which went into effect April 16.

According to Arinc and ATA, the reallocation order was issued without any prior public notice and without the public interests being given an opportunity to present their views.

Until now, the frequency bands in question, 420-450 mcs. and 8,500-9,800 mcs., were assigned to aeronautical radio-navigation and radio-navigation respectively.

The order requires non-government users of these portions of the spectrum to vacate and shift operations to other frequency bands.

Basis for the order is the decision by ODM that the frequencies concerned are essential to the national defense. ODM claims these bands cannot be shared.

On May 7, Arinc and ATA petitioned FCC requesting hearings for reconsideration and modification of certain portions of the order.

In their petition, Arinc and ATA expressed consternation over the probability that the much-needed collision avoidance systems (planned for the 420-450 mcs. band) will be retarded considerably.

FCC says Arinc and ATA some time ago were advised to avoid using frequencies in the 8,500-9,800 mcs. band. Petitioners hotly deny this statement.

Arinc and ATA state that, originally, the military elected to use 8,800 mes. for Doppler and that General Precision Lab., Inc. and British Marconi developed equipment accordingly.

As a result of FCC's order, Navy and Air Force probably will use the 13,250-13,400 mcs. band proposed for use by Doppler systems.

Although Navy already is operating Doppler in this frequency range, the Arinc/ATA petition says their studies show this band is not acceptable at this time for civil application. And even if it were, best estimates are that it would take two to three years to redesign present equipment for use at another frequency.

16

CAA Wants \$1 Billion for 1959-'63

Congress is set to act this week on a record CAA budget request for the new fiscal year and to weigh, simultaneously, the 1959 phase of a proposed \$1-billion-plus five-year airways expansion program.

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In a request to the House Appropriations Committee, CAA's bid to finance a speeded-up airways program through 1963 topped the one-billion dollar mark for the first time. The revamped proposal, reflecting substantial increases over prior estimates, is a minimum to meet the fast-approaching jet age, CAA says.

Late last week, the Committee was set to send its recommendations to the House floor. No crippling reductions were envisoned. But the possibility of modifications was cited by a subcommittee spokesman.

The CAA is seeking \$438,700,-000, or \$92,121,535 more than for fiscal 1958, to finance its activities during the year starting July 1. Of this, \$230 million is earmarked for operation and regulation. For installation of air navigation equipment \$175 million is asked—the 1959 portion of the huge airways program.

CAA is requesting \$30 million, under the airport grants-in-aid program, to liquidate past contracts, \$5 million more than was allotted last year. Another \$2.5 million is sought for Washington National Airport and \$1.2 million for the maintenance of Alaskan airports.

"The increases in the 1959 requirements that we have before us," CAA Administrator James T. Pyle told the subcommittee, "are geared in the first place to the anticipated increase in domestic air carrier passenger miles from some 27.2 billion to about 30.5 billion in this fiscal year under consideration."

To bolster CAA's request for

higher and higher funds, CAA officials cited these other fast-multiplying aviation statistics: an increase of itinerant aircraft operations from 17.1 million in 1957 to an anticipated 20.9 million in fiscal 1959; a 59% jump in airmen licenses from an average 80,000 annually to 150,000 in 1957; a 37% increase in instrument approaches between 1956 and 1957, and a spurt in the rate of production of civil aircraft from 3,500 in 1949 to 7,000 in 1957.

Projecting spiraling growth of the past into the future, CAA asserts it will have to spend \$1,027 million for new hardware to grapple successfully with air navigation problems of the next five years. From 1957 through 1963 the total may reach \$1,248 million, including the cost of development of automatic devices by the Airways Modernization Board. Operation costs will push the figure higher.

Following is a breakdown, by fis-

Federal Airway Plan

Establishment of air navigation facilities-Implementation schedule for fiscal years 1959-63

	Total	Qua	lities	F.	Y. 1959	F.	Y. 1960	F.	Y. 1961	F.	Y. 1962	F.	Y. 1963
Facilities or Services	Through F. Y. 1958	In plan	Through F. Y. 1963	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
long-range radars (incl joint use) Air route surveillance (ARSR) ATC radar beacon Terminal area radar Airport surveillance (ASR) Airport surveillance (ASR) Airport surveillance (ASR) Airport surdace detection (ASDE) Precision approach radar (PAR) ATC radar beacon Airport traffic control tower service Air navigation facilities (VORTAC) WHF omniranges (VOR) Backfit VOR w/TACAN rho/theta VORTAC's (theta/rho/theta) VOR test signal facilities (VOT) Instrument landing systems ILS only Backfit ILS's with TACAN rho ILSTAC Moproach lighting Standard approach (ALS) Sequenced flashing (SFL) Subtotal (major facilities) Other improvements to system Long-range radars Terminal area radars Air route traffic control centers.	40 62 634 299 47 31 195 89 36	60 100 76 30 43 33 33 79 40 225 20 	100 100 138 30 23 189 293 677 636 573 110 235 225 20 235 83	16 43 19 10 5 23 150 62 33 19 80 7	\$28,835,000 17,545,000 2,579,000 50,816,000 3,675,000 9,002,000 112,452,000 6,049,000 4,119,000 11,029,000	18 31 17 500 16 100 1000 26 	\$56,450,000 24,280,000 2,200,000 53,191,000 5,575,000 141,696,000 18,824,000 8,524,000 15,231,000	16 16	\$38,000,000 25,060,000 1,600,000 54,582,000 16,420,000 420,000 18,816,000 12,666,000 19,178,000	100 100 166 499 100 500 210 100	\$23,750,000 26,640,000 1,700,000 39,740,000 10,750,000 15,820,000 15,820,000 13,877,000 39,952,000	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	\$23,560,000 1,800,000 48,850,000 36,225,000 500,000 675,000 7,375,000 12,183,000
Airport traffic control tower serv. Air traffic communication stations Intl. air traffic comm. stations Air navigation (VORTAC) Instrument landing systems Approach lighting L/MF facilities Intermediate fields Flight inspection, logistics aircraft Housing, utilities and misc.					4,353,000 7,126,000 2,155,000 1,156,000 3,271,000 406,000 1,114,000 1,933,000 11,714,000 8,123,000		1,619,000 8,849,000 13,400,000 4,701,000 373,000 446,000 612,000 8,855,000 6,040,000		1,113,000 8,425,000 4,316,000 9,041,000 2,273,000 703,000 2,545,000 980,000 2,851,000		486,000 7,941,000 4,847,000 10,623,000 2,719,000 255,000 1,176,000 4,643,000 3,730,000		455,000 7,165,000 2,751,000 17,280,000 2,080,000 385,000 15,931,000 2,538,000 3,000,000 3,117,000
Subtotal (improvements)			-	13	62,548,000		89,749,000	2	83,440,000 19,522,000	2	15,163,000		74,935,000 85,870,000

ION

Additional radars may be needed to obtain the required coverage.

cal year, of major spending prospects: 1959, \$175 million; 1960, \$231,445,-000; 1961, \$219,522,000; 1962, \$215,-163,000, and 1963, \$185,870,000.

In the next fiscal year CAA has earmarked its major procurement funds this way: \$34,883,850, new long range radar; \$21,664,270, additional terminal area radar: \$11,029,300, improvements and relocation of air route traffic control centers; \$6.931,660, airport traffic control towers; \$7,126,050, improvements in air traffic communication systems; \$2,154,600, international air traffic communication stations; \$51,972,355, further implementation of air navigation facilities for civil/military use (VORTAC); \$6,-945,840, instrument-landing-system installations, and \$9,408,120, additional airport runway approach lights.

With the increasing number of facilities, CAA officials said, goes the requirement for more personnel. In the fiscal 1959 budget, authority is asked for 29,981 positions, a substantial increase over the 24,600 authorized in 1958,

CAA also wants approval of the use of 112 aircraft, 20 more than the agency had this fiscal year. All but two will be provided from military surplus, and one C-123 Fairchild cargo plane is being purchased.

All in all, testimony suggested that CAA's honeymoon with Congress is continuing. Congress, more or less committed to an expensive multi-year airways program, is not apt to return aviation to feast-and-famine days of the past. But beyond that, individual legislators are frankly impressed with CAA's new look.

The Civil Aeronautics Board asked Congress for fiscal 1959 funds of \$6,100,000, or \$610,600 more than it was granted in 1958. Request includes funds for 51 additional jobs.

The Board had requested 76 positions but the Budget Bureau trimmed the number. Asked how many people were needed "to get on top of this job and stay there," witnesses said the agency needed 100, asked for 76 and was informed by the Bureau 51 could do the work.

CAB Chairman James Durfee and other Board witnesses outlined to a House Appropriations Subcommittee requirements for \$40.7 million for subsidy payments, an increase of \$4.1 million. Most of the subsidy payments, \$31.7 million, will be allocated to local service carriers. Payments to helicopter operators will total \$4.3 million; Alaskan carriers will get \$5.7 million and the international carriers \$782,000.

Testimony also disclosed that a decision in the General Passenger Fare Investigation will be made early next year.

BRIEFS

Manufacturing-Military

Lockheed Aircraft Corp. was awarded a \$1,632,878 tax refund plus interest by the U.S. Court of Claims. Refund covered payments for 1948 and 1949.

Westinghouse received a \$5.6-million Navy contract for continued development of the J34 engine. Objective is to further improve reliability and de-

pendability. All engineering work wirelate to the J34-WE-46 which wirelate to the Navy's North America T2J trainer. Work will be performed a Westinghouse's Kansas City plant,

Lycoming Div. of Avco Mfg. Concompleted the 50-hour preliminar flight rating test of the T55, said to be the lightest U.S. aircraft engine ever to achieve 1,650-plus eshp. To was conducted with T55-L-1 turbor prop version weighing 695 lbs. and developing 1,676 eshp. A helicopte version is under development.

AMB Asks \$35 Million for '59

The House this week is set to debate the request of the Airways Modernization Board for \$35 million to finance its fiscal 1959 activities. The Board, in its eight months of existence, has already obligated \$14 million, and next year expects to obligate the full \$35 million, if authorized by Congress.

Testimony before the House Appropriations Committee has disclosed that the Board's projected personnel requirements of last September have been upped from 371 positions to 404, two of which would be top-level GS-16 and GS-17 grades.

Biggest item in the budget request was \$10,215,000 for AMB's new test center at Atlantic City, N.J. Funds for this project would include: \$2,191,000 for runway rehabilitation; \$2,614,000 for technical facilities; \$3,000,000 for procurement of equipment and system engineering; and \$2,-410,000 for supporting services. Officials testified that a saving of \$685,-000 in the request for funds for the National Aviation Facilities Experimental Center was made possible through the acquisition of the Naval Air Station at Atlantic City, already a going operation.

Questioned as to AMB's current objectives, Board officials pointed out that unlike the National Advisory Committee for Aeronautics, which carries out "probing research," AMB is established to carry on systems experimentation in a practical way.

Chief among the elements of the improvement program to be initiated before the Board's compulsory dismemberment in 1960 is data-processing equipment that: (1) will automatically accept flight plans; (2) compute times of arrival and intermediate traffic control fixes; (3) detect possible collisions; (4) adjust data a reports from in-flight aircraft come in and (5) schedule airport landing and takeoffs for maximum runway utilization.

Another important AMB goal is the coordination of civil traffic control aids with those of the Air Defense Command in such a way that ADC's "scrambles" can be made through the ordinary channels of commercial traffic. It was emphasized by AMB chairman E. R. Quesada that "in this program there are no new inventions. It is using existing and proven techniques."

Air Station at Atlantic a going operation.	techniques."	using existing and prove
Type	Nomenclature	Use
1 twin jet bomber	A3D (Navy) or B66 (AF) C131D (AF)	
two-seat jet fighter trainer	F100 (AF), F8U or F11F (N) L27 (AF) or Cessna 310 (Civ.)	For live experimentation of route, terminal, navigation a communications systems.
1 small, twin engine transport		
1 light, fabric covered, single	Piper J3 (Civ.)	For radar control and navig
1 light, metal covered, single engine.	Ercoupe (Civ.) or Cessna 182	tion of light aircraft.
1 helicopter	HUP4 (N) or H-34 (AF) UF1 (N) or SA16 (AF)	Primarily for rescue, second arily for experimentation.
1 helicopter	H13H (Army)	Helicopter navigation tests the New York area.

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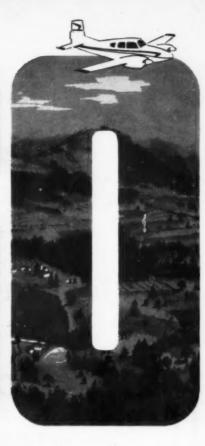
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WITH ARC'S TYPE 210 TRANSCEIVER

The rapidly increasing volume of air traffic and the need for moze precise traffic control has necessitated a tremendous increase in the number of assigned radio frequencies to carry on the necessary air-ground communications.

Only a few years ago pilots could operate with 10 or 20 channels. Later frequencies were incompared to 80 or 90. Plans now call for 360 frequencies—enough to meet the need for years to come. In view of this channel increase, ARC now of ers an all-channel, flight proven transmittering eiver (Type 210 Transceiver) covering all 360

channels. The powerful 15 watts guarantees optimum distance range and the knifelike selectivity assures freedom from adjacent channel interference. Provision has been made for the selective use of single or double channel simplex whereby transmissions are made on a frequency 6 megacycles higher than the receiver frequency. There is no wait between receiving and transmitting for re-channeling.

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SPOTLIGHT

Convair is offering new "Model 600" high-capacity, short-to-medium range jet for short runway operations. It has larger wing and tail, longer fuselage and higher thrust (presumably turbofan) jet engines. Seating will be 92 plus 6 lounge, first class; 125 all coach; 139 thrift class. Maximum taxi weight is 219,000 lbs.; max. takeoff, 217,800; zero fuel weight, 144,000 and landing weight, 177,300. New model would cruise at Mach 0.91.

Grumman's new A2F attack plane, winning design in a recent Navy competition, will be powered by twin Pratt & Whitney J52 turbojets mounted in the fuselage. The two-place aircraft might be

described as a king-size F11F.

Vertol's new Model 107 helicopter, now flying with twin Lycoming 825-shp T53-L-1 turboshaft engines, is designed for power by two General Electric T58s rated at 1,024 shp each. In the event of engine failure, a single T53-L-1 will not sustain the 20-passenger machine in flight. Possible future engine installations are a more powerful version of the T53 or Lycoming's 1,600-shp T55.

British Overseas Airways Corp, has purchased a portable version of Bell Aircraft Corp.'s automatic landing system for evaluation in

the U.K.

Wright Aeronautical/AiResearch entry in Army's 250-shp turboshaft competition has growth capability to 500 shp. First step would be increase to 375 shp by increasing turbine inlet temperature with reduction in planned life of 1,000 hrs, between overhauls, Jump to 500 shp would involve turbine cooling, Responsibility for compressor, combustion chamber and control system would fall to AiResearch, with Wright Aero handling the balance of the engine, Designation is SE103B.

De Havilland's upcoming 9,750 lbs. gross weight transport resembles a Dove with swept fin and rudder. To be powered by two of Lycoming's new 520-hp GSO-720 piston engines, the six-passenger, two-crew executive version is designed to cruise at 240 mph at 10,000 ft.

Lycoming's T53-L-1 has completed 150-hour qualification testing. Tear-down revealed condition of engine was exceptionally good.

First three Fairchild F-27s have rolled out and No. 4 airplane, slated for Piedmont Airlines, was due out at presstime. First two F-27s will be retained by Fairchild for certification. No. 3 and No. 5 are West Coast Airlines aircraft.

New York Airways has installed Bendix Pacific Division's sonic altimeter in its five new Vertol 44 helicopters, first of which is due for delivery at presstime. This represents first commercial installation of the device, reportedly accurate to six inches with helicopter within 10 feet of ground.

Climatic Projects Laboratory at Air Proving Ground Center, Eglin AFB, Fla., reports some serious problems in temperature tests of hydraulic systems of new aircraft. Systems are tested within the -65-to-+165°F range. Leaks are showing up in seals and O-rings at the low end of the temperature range and at 135°F in the high range. A spokesman said the hydraulic system of one new fighter practically had to be re-engineered to solve the problem.

Two more Martin P6Ms are about ready to join the one now figing at Baltimore. These and the next three will have four Allison

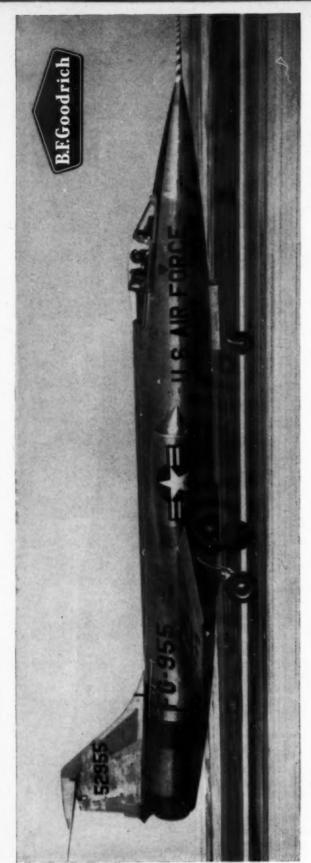
J'1s, Subsequent P6Ms get Pratt & Whitney J75s.

Practically all the Convair B-36s are headed for the scrap heap as they are replaced by Boeing B-52s. Planes can find no place in either military or commercial use. Reusable parts are now being cataloged for resale.

All of the detachable pods used with the Convair B-58 carry some fuel, according to Air Force sources. But pod also may serve other purposes—as a nuclear or other type bomb, or as a low-altitude propelled missile.



Circle No. 13 on Reader Service Card.



New B. F. Goodrich Fabric Tread Tire outlasts other jet tires 5 to 1

This new, cooler running tire survives up to five times as many high-speed takeoffs and landings as tires previously used on the F-104, Lockheed's "missile with a man". Developed and built by B.F.Goodrich, the Fabric Laminated Tread Tire is today's most important improvement in the field of high-speed tires.

Multiple plies of nylon cord inside the rubber tread stock of this B.F.Goodrich Tire produce a stiffening effect that reduces rubber distortion under load. These plies tend to equalize the modulus between tread and carcass, thus cut down the hear normally senerated by flexing between

the carcass and tread of conventional tires. The laminates also help resist tread cutting and punctures—check the formation of disastrous high-speed "shock waves".

In addition to the Fabric Laminated Tread, the B.F.Goodrich Tire used on the F-104 has the unique Sinewave Tread pattern. This pattern not only eliminates stress points found in ordinary treads—it reduces the mass in which heat can build up.

Operational F-104's have made as many as 25 take-offs and landings on B.F.Goodrich Fabric Tread Tires—with no sign of tire Jailure. This performance is amazing.

compared with only four or five takeoffs obtained from other high-speed tires. Find out how these new tires can give your supersonic aircraft safer takeoffs—more landings. Write B. F. Goodrich Aviation Products, a division of The B. F. Goodrich Company, Akron, Ohio.

Cross-section of B. F. Goodrich Fabric Tread Tire shows how fabric laminates are built into rubber tread stock to provide extra resistance to tread separation. New Sinewave Tread pattern permits, for the first time, equal distribution of tread rubber in high-speed jet tires.

B.F. Goodrich aviation products

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Circle No. 10 on Reader Service C

MERICAN AVIATION

AMERICAN AVIATION

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Here's what a Federal Aviation Agency could do:

- Manage all U.S.-controlled airspace
- Establish all-inclusive air traffic control systems
- Issue and enforce air safety regulations
- Set standards for aircraft design and operation
- Develop major policies for U.S. aviation

A Look Ahead at FAA's Potential

by Robert Burkhardt

ONE OF THE long-observed facts of Washington life is that, while in many quarters ideas are very suspect things, they often have a far-reaching impact.

At present there is a hurricane of ideas accumulating in the offices of Lt. Gen. Elwood R. Quesada, USAF, ret., special assistant to the President. Gen. Quesada is charged by law with the job of architecting a new Federal Aviation Agency.

He and a small staff of assistants are currently busy around the clock accumulating the ideas of those who will have to live in the government's new aviation home; later in the year these ideas will be sorted and sifted and put together into a basic aviation law to be presented to Congress in January.

Being still in the idea stage, the work going on is somewhat mercurial and hard to come to grips with. In addition, there is a very real fear on the part of some of the people working on the project that if several of the ideas are given premature publicity, an early and possibly adverse reaction may be generated.

Even so, realizing the risk inherent in any premature disclosure of potentially controversial and politically significant ideas, Quesada is willing to discuss the plans being formed and the suggestions being considered. In an exclusive interview, he summed up some of his basic problems as well as his future hopes for the unborn agency.

All change is not progress," he

told me. "We are looking at many ideas and suggestions, Some of these are very good, but they are not necessarily good for a Federal Aviation Agency. What we are trying very hard to construct is a good agency, one that will be good for the country and good for all three components of aviation: the airlines, the military and the private and business flyers."

In the nature of things, each of these three segments will gain from the new agency, but each will also have to give up something if the new agency is to be a vital and effective organization. That is Idea No. 1—and it is encouraging to report that all three affected users of air space are in reasonably general agreement.

Equally fundamental is the idea that the new agency should be almost entirely concerned with the environmental aspects of air travel. This is in contrast, say, to the Civil Aeronautics Board, which will continue undisturbed in its work of regulating the economic side of air travel, such as awards of routes and the determination of commercial air fares. The as-now-visualized FAA also would not be concerned with aircraft research, which means that the National Advisory Committee for Aeronautics would not be part of the FAA grouping.

NACA may very well end up as the nucleus of a still newer agency being considered by Congress to handle the technical problems of outer space.

By the same definition, the Aviation Division of the State Department will be "included out" of the FAA, since State's primary function is to advise the President on international airline routes and foreign air carrier permits.

On the other side of the coin is the Civil Aeronautics Administration, which will definitely be at the very heart of the new Federal Aviation Agency, since its primary job is air traffic control. Along with the CAA will very likely go the accident-investigation and rule-making authority of the Civil Aeronautics Board, as well as the independent Airways Modernization Board, and the environmental control work of the Air Force, the Army and —to a more limited degree—the Navy.

It is this last idea—taking over military air traffic control—that will be the main function of FAA.

If the Air Force were unwilling to give up its own traffic control operations, insisting that national defense considerations require that all military aircraft be at all times under the direct control of the military itself, the FAA would be as handicapped as a stool with only two legs. Air Force has made a thoughtful appraisal of the problem of steadily increased crowding of the air. As a result, at least a tentative conclusion has been made to build into the new FAA the concept of operational civilian control of all U.S. airspace, both in this country and abroad.

The table of AF traffic control operations (page 26) gives an idea of the extent of the word-load the FAA will be called upon to handle. January

VIATION

. . . A look ahead at FAA

was a relatively low operations month, because of adverse weather conditions. Even so, nearly a million takeoffs and landings were handled at the 208 bases operated here and overseas by the AF. More than a fifth of all landings involve approach control operationsand require a high degree of skill and experience on the part of tower personnel.

The problem of skilled technical personnel to handle airport tower operations is one that is vexing both the AF and the CAA. In neither organization is the salary paid in proportion to the responsibilities, and there is real hope that when FAA takes over, a better balance between pay and skill will be struck.

Idea of FAA staffing the towers and handling all air and ground control operations at AF bases-including those of the Strategic Air Commandgives rise to a number of security and military mobilization problems. But an ingenious solution is in the works, one which may both cut through these difficulties and at the same time reduce mobilization time among reserve air base operations personnel to the irreducible

This idea envisions two kinds of FAA personnel: a civilian clerical staff, with the agency director also being a civilian (appointed by the President with the advice and consent of Congress) and also what, for want of a better phrase, is being called a "uniformed service" for FAA technical personnel. Same idea is behind the career Foreign Service of the State Department and the Coast Guard in the Treasury.

Some of the more important advantages of such a quasi-military organization are: (1) that morale is usually higher, (2) pay and allowances can be better managed. (3) rotation to overseas posts and back home again is less

-USAF Traffic Control Operations-January 1958

No. of Bases	Landings & Take Offs (in thousands)
52	164
20	59
15	93
18	94
10	48
31	79
C 22	83
24	255
16	69
208	945
	52 20 15 18 10 31 AC 22 24 16

burdened by red tape and civil service regulations, and (4) in time of war the personnel are not just immediately available for active duty; they are already on active duty. This last item is important to the Defense Department in considering whether the FAA will be able to command the full confidence and cooperation of AF, Army and Navy pilots.

Within the framework of these basic ideas, a number of problems still remain to be worked out. Should aviation weather forecasting and control work be a part of FAA? And what about airway communications and radio frequency allocations? Both of these questions are raised by the Curtis report (former presidential aide Edward P. Curtis was Quesada's predecessor)which recommends establishment of the FAA-but no answers are even tentatively suggested and Gen. Quesada's staff has at least two hard decisions to make.

Most likely resolution of these two points—weather forecasting and radio frequencies-will be to give FAA a claimant agency role. Responsibilities of Weather Bureau and the Federal Communications Commission would remain intact.

What of Navy air operations? Should the FAA operate just shore bases—or is there some advantage to be gained by placing FAA tower operations experts aboard aircraft carriers as well? Answer seems to be in the negative, though the day of total airspace control is so close at hand that even this apparently farfetched idea cannot be casually dismissed.

Whatever decisions are made will be subject to congressional scrutiny. The airline industry, private flyers and other interested parties, will very likely have a chance to present comments at public hearings early next year. Among the interested parties will be the Commerce Department, which would lose some 25,000 employes and about half its appropriated funds in the exodus of CAA. Army and Navy policy may not take as positive a line as the AF, since these two agencies have had to fight hard to hold their own in the interservice battle for air operation control.

Thus, while many of the ideas already tentatively adopted bear the stamp of approval of agencies and organizations affected, there is also likely to be some later hesitancy, as well as cases of policy reversal and downright opposition. Gen. Ouesada and his staff know this, but are hopeful that if they do a sufficiently skillful job of ideacollecting and law-drafting, the forces of common sense and logic will prevail.

AF Lauds Nellis ATC

Investigator says procedure would have averted crash

With Civil Aeronautics Board pub. lic hearings into the April 21 collision of an Air Force F-100 and United Air Lines DC-7 over Las Vegas expected early next month, USAF investigators issued a strong endorsement of ATC practices used at Nellis AFB.

In the opinion of one investigator of its Directorate of Flight Safety Re. search, the control exercised in accord with AF Regulation AFR 55-19 of VFR traffic from Nellis is outstanding (The F-100 was operating on VFR when it collided with the DC-7.)

The investigator further reported that, if a similar procedure were no lized by CAA air traffic control, accidents of the Las Vegas type could

possibly be avoided.

Meanwhile, preliminary CAB findings reported by Safety Bureau Director Oscar Bakke to a House Appropristions subcommittee (Commerce) indicated that the descending F-100 probably was in an unusually steep right angular bank. As Bakke told Congressmen, the bank must have been rather close to about 80 degrees, "which would have him almost standing on his ear. so to speak."

The flight path of the F-100F was across the nose of the DC-7 and the directions of both aircraft resulted in the right wing of the F-100F passing through the right wing of the DC1 about at 45 degrees across the main wing spar at a point starting about 10 ft. from the DC-7 wingtip.

During the House hearings, CAA Administrator James T. Pyle and Airways Modernization Board Director. Lieut. Gen. E. R. Quesada (USAF, ret.), gave their appraisal of action under way to avoid future collisions.

Pyle told Congress the problem shapes up as a two-phase program. The immediate one involves examining with the Air Force and Navy each base facility involving high-speed aircraft in a joint civil-military attempt to plug any "loopholes" that may exist.

The second phase, involving positive air traffic control, Pyle said, cannot be done overnight, but is a situation in which expenditure of money is not the only thing.

Quesada, who is a Presidential assistant as well as AMB director, backed Pyle's view. He told Congress: "You can have all the radar you possibly could buy; you could have all of the communications that you could ask for, but unless you have the proper procedure and proper method of using it you really have nothing."

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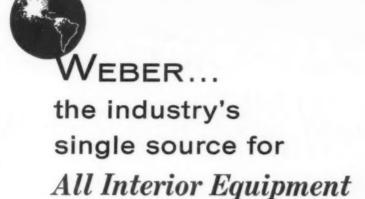
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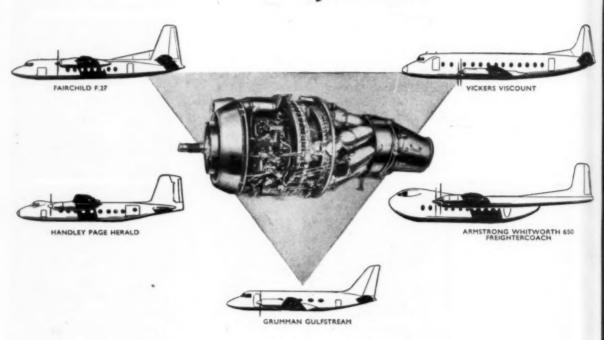
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A Special AA Report on Aircraft Furnishings:

- Carpeting and Drapes
- Galley Equipment
- Windows

- Cabin Lights and Switches
- Seats and Upholstery
- Safety Accessories

A Multi-Million-Dollar Market Booms

THE PUBLIC UNVEILING of the first U.S.-built jets and turboprops later this year promises far more than merely a new era of speed in air travel. Even more apparent to the average air passenger will be the revolution in comfort and luxury.

Aircraft furnishings, already a multi-million-dollara-year market in today's piston transport business, will boom into the turbine age. Higher passenger densities in the big jets simply mean more seats, more galleys, more lavatories and more coatroom facilities.

And aviation's first real venture into carrying "railroad car" lots of passengers in a single airplane has become an overriding influence among carriers to elevate individual passenger comfort to levels never before attempted by their landlocked rail competitors.

An airplane set of cabin seats for a new U.S. jet ranges from \$50,000 to \$70,000. The Boeing 707 in its highest-density model now planned could seat 189 passengers. The Douglas DC-8 will have anywhere from four to six coatrooms compared with a single such installation on its predecessor DC-7C.

These are but a few of the statistics facing carriers planning jet services. And from the start the airlines and manufacturers have spared no expense in bringing the best talent in the country to bear on the problem.

Boeing Airplane Co. took the lead in this department as early as June 1956 when it unveiled a \$500,000 full-scale mockup of its 707. It retained Walter Dorwin Teague Associates, New York industrial designers, to handle the project.

From this "live" mockup with bonafide cabin seats, airline officials buying 707s went behind closed doors to plan luxurious jet cabins to their own tastes. Once its purpose was served, the \$½-million mockup was dismantled and now each airline has its own less costly model for experimentation and cabin service training.

American Airlines spent an estimated \$1 million on

a new "living room" approach to jet interiors, complete with tables and lamps. However, it sacked the entire plan on the Lockheed Electra early this year reportedly because of its inflexibility in future high-density conversion projects that might develop.

But this doesn't mean the cause was lost entirely. AA has been silent about its interior furnishing program on the 707 and could very well come up with a "living room" layout in the big jet.

Douglas, meanwhile, has lost no time in applying its special approach to win customers. All indications are that it is playing jet interior design straight with no decorative illusions that would make the cabin appear smaller.

Its approach, apparently, is directed at making the individual passenger aware of personalized service built into the aircraft. Each cabin seat will have its own integral reading light that is designed to do its job completely independent of how the interior is rearranged in the future for different types of services. Cold air outlets are another integral seat feature obviously aimed at the concept of *individual* passenger comfort.

At Convair, where the 880 is due to roll out late this year, interior planners apparently don't go along with the Douglas approach. Cabin ceiling levels are varied to eliminate the "tunnel" effect of a long cabin. And in a reversal of the trend toward mounting cabin seats on tracks for quick conversion from first-class to coach layout, Convair has thrown out the tracks and returned to stationary seat-mounting.

In a carbon-copy adherence to past experience, the big five U.S. aircraft builders have turned the airlines loose on a "customer selection" approach to furnishings. As a result, the list of suppliers reads like a "blue book" of the major competitors that have shared this market since the end of World War II. The accompanying tables (pages 30 and 31) make this quite obvious.

MAY 19, 1958

Furnishings Report

FURNISHINGS

BOEING 707-120

CONVAIR 880

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General Provisions

Carpets and Curtains

Galleys

Lavatories

Lighting & Electrical Fixtures

Seats and Equipment

Miscellaneous

Cabin space—8,294 cu, ft.; head-room in aisles—7' 7"; minimum head-room for seated passenger—5' 2" from floor; aisle width: standard service—1' 8"; coach layout—1' 6"; coat rooms—3; passenger windows—98, acrylic type by Goodyear and Swedlow Plastics Co. Two passenger entrance doors located on left side forward and aft. Six passenger emergency exits provided (includes two galley doors).

Cabin carpeting material—nylon or wool, supplied by Collins & Aikman Corp., Firth and Karagheusian. Backing material—foam rubber pad weighing 7½ oz./sq. ft.; window shades—vinyl-mylar laminate by Sieberling Rubber Co.

No. of buffets—4; average electrical load capacity per buffet—5kw; units supplied by airlines from either Nordskog Co., Inc., REF Mfg. Corp. or Norris Thermador. Crockery, serving trays, grills, refrigerators, ovens, coffee-makers, thermos jugs, silverware etc. (customer-furnished).

No. of lavatories—4; No. of washbasins etc.—4, by Weber Aircraft Co.; No. of washbasin mirrors—4, by Fuller Glass Co.; No. of toilets, disposal tanks etc.—4, by Wickland Mfg. Co. Royalite floor covering by U.S. Rubber Co.

Cabin ceiling lights by Grimes Mfg. Co.; passenger reading lights by Safety Industries, Inc., Lighting Div.; "No Smoking" lighted placards by Luminator, Inc.; passenger call switches by Hetherington, Inc. Public address and intercommunication systems by Telephonics Corp. and Remier Co.

No. of passenger seats installed—189 max, supplied by Hardman Tool & Engineering Co. for Boeing; by Aerotherm Corp. for Airlines. Average weight per single seat—32 lbs. Seat upholstery covering—predominantly nylon, supplied by Collins & Aikman Corp., Moss Rose and E. F. Timme & Sons. Head rest covers—Indian head; seat attachments and mechanisms by Porter Lock; hassocks, if used instead of foot rests, C. R. Daniels, Inc.; ash trays, Hardman Tool & Engineering Co. Safety belts (passenger), Associated Suppliers Co.; crew seat belt by Davis, shoulder harness by Pacific Scientific Co. Pilots' and flight engineers seats by Weber Aircraft Co., stewardess' seat manufactured by AiResearch Aviation Service to Boeing design. Blankets (customer-supplied).

Life rafts/jackets by Air Cruisers Div. or Goodyear Aircraft Corp. First aid kits by Johnson & Johnson; passenger masks by Aro Equipment Co.; air outlets by Wemac Mfg. Co.; oxygen outlets, valves by Scott Aviation Corp. Potable-water systems—2, located independently fore and aft. Tank made by Castle Industries; gauge by Boston Auto Gauge Co.; valves by Republic Mfg. Co. and Chemtral; inflatable escape slides by Air Cruisers Div. Hand fire extinguishers by Walter Kidde & Co., Inc.

Cabin space—5,444 cu. ft., head-room a aisles—7' 1"; aisle width: standard servis—2' 4"; coach layout—1' 7"; coat room—3; passenger windows—88 made ai stretched acrylic, manufactured by Swedin Plastics Co. Has one entrance door forward and one aft, both on left side. Six passenger emergency exits are provided.

Cabin carpeting and curtains selected by customer.

No. of buffets—4; average electrical last capacity per buffet—5kw. Ovens and buffets by Weber Aircraft Corp. Coffee-makers by Nordskog Co., Inc.; thermos jugs by Landers, Frary & Clark

No. of lavatories—3; washbasins—1 per lavatory. No. of toilets, disposal tanks etc.—1 per lavatory. All equipment manufactured by Weber Aircraft Corp. Washbash mirrors (1 per lavatory), San Diego Glam Co. Vinyl floor covering by Duracote Cap. Receptacles provided (1 per lavatory) for electric razors, etc.—110v ac and 28v dc.

Cabin ceiling lights, aisle lights and "Mo Smoking" lighted placards manufactured by Luminator, Inc. Passenger reading lights by Airite Products, Inc. Passenger call switches, Hetherington, Inc. Public address and intercommunication systems, Collins Radio Ca.

No. of passenger seats installed—109 coach 88 standard, manufactured by National Seating Co. to Convair specifications. Average weight per double seat—50 lbs. Sent upholstery covering supplied to customer order. Foot rests or hassocks by Convair. As trays by National Seating Co. Safety belts (Crew), Pacific Scientific Co. Passeger safety belts, optional. Pilots' seats 12 and flight engineer's seat by Weber Aircraft Corp. Stewardess' seats (3) supplied by Convair.

Potable-water system (1) located centrally with lines to buffets and lavatories, supplied by Convair. Hand fire extinguishers in cabin by Walter Kidde & Co., Inc.

U.S. Turbine Transports

DOUGLAS DC-8

FAIRCHILD F-27

LOCKHEED 188 ELECTRA

Cabin space—7,210 cu. ft.; head-room in aisles—7' 2"; minimum head-room for seated passenger—8½"; alsle width: standard service—1' 9"; coach layout—1' 4"; coat-rooms 5 or 6; passenger windows—50 plastic type by Douglas. Two passenger entrance doors located on left side. Eight passenger exits provided.

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Cabin carpeting and curtains selected by customer.

No. of buffets—4 to 6 (customer furnished). Average electrical load capacity per buffet —7kw. Crockery, serving trays, grills, rerigerators, ovens, coffee-makers, thermos jugs and silverware, all customer-selected.

No. of lavatories—4 to 6; washbasins etc.

4 to 6, manufactured by Associated Pacific and Rite Hardware. No. of washbasin mirrors—4 to 6. No. of toilets, disposable tanks etc.—4 to 6, by Wickland Mfg. Co. Floor covering selected by customer. Electrical outlets for shavers etc. (1 per lavatory), 115 w ac and 28 v dc.

Cabin ceiling lights—22 fixtures with prorision for approx. 600 lamps. Aisle lights number approx. 25. "No Smoking" lightedplacards—3. All equipment by Luminator, Inc. Passenger call switches (approx. 50), Retherington, Inc. Public address and intercommunication systems (customer selected).

No. of passenger seats installed—176 max., 116 min. manufactured by Douglas. Average weight, per single seat—35 lbs. first-class type; 32 lbs. coach type. Seat upholstery overing, head-rest covers (customer selected). Seat hardware, attachments, mechanisms also foot rests supplied by Douglas. Hassocks, if used in place of foot rests (customer selected). Ashtrays and passenger safety belts by Douglas. Crew safety belts, Pacific Geientific Co. Pilots' seats (incl. jump seat)—, flight engineer's seat, Aircraft Mechan is, Inc. Stewardess' seats—4-5 supplied / Douglas. Blankets, pillows etc. (custom or furnished).

Life i ts/jackets, first aid kits, oxygen outlets (customer furnished). Air outlets, Wema Mfg. Co. Potable-Water systems (2) locate forward and aft, Douglas. Four fire exting shers located in cabin. Cabin space—1,620 cu. ft.; head-room in aisles—6' 9¼"; aisle width—1' 3"; coat rooms—1; passenger windows—20 plastic and glass type of Libbey-Owens-Ford Glass Co. Entrance door with integral stairway located left side aft, manufactured by Fairchild. Five passenger emergency exits are provided.

Cabin carpeting material—Durug (under seat) by Duracote Corp.; mohair (aisle) by Collins & Aikman Corp. Backing material made of rubberized hairfelt. Window curtain or drape material—fabric, made by F. Schumaker & Co.

No. of buffets—1; average electrical load capacity—309 amps. Buffet manufactured by Ludwig Honold Mfg. Co.; thermos jugs by Mansfield Aircraft Products Co.

No. of lavatories—1; No. of washbasins etc.—1, by Fairchild and Adams Rite Mfg. Co.; No. of washbasin mirrors—1, by Fairchild. No. of toilets, disposal tanks etc.—1 toilet (pail type) by Fairchild. Durug floor covering by Duracote Corp. Receptacles for razors, etc.—1, sanitary dispenser—1.

Cabin ceiling and aisle lights—18; passenger reading lights—40, manufactured by Luminator, Inc. Public address system—optional; intercommunication system—stewardess hand set by Remier Inc.

No. of passenger seats installed—40, by Aero Smith; average weight per single seat —35 lbs.; seat upholstery coverings—mohair and cotton by Aero Smith. Seat hardware, attachments and mechanisms by Falrchild and Aero Smith; ashtrays also by Aero Smith. Passenger and Crew safety belts by Brown-Line Corp. Pilot's seats—2, by Aircraft Mechanics, Inc.; flight engineer's and stewardess' seats by Fairchild.

Air outlets—40 eyeball type by Luminator, Inc.; oxygen outlets—3, located in cockpit, manufactured by Aro Equip. Corp. Hand fire extinguishers—1 in forward compartment and 2 in main cabin, manufactured by Walter Kidde & Co., Inc.

Head-room in alsles—6' 9"; minimum head-room for seated passengers—5' from floor. Alsle width: standard service—2' 1"; coach layout—1' 5"; coat rooms—1; passenger windows—33, made of plastic, manufactured by Swedlow Plastics Co. Entrance door with integral stairway located forward of wing, built by Lockheed. Six passenger emergency exits are provided.

Cabin carpeting material—wool or nylon. Window curtain or drape material—wool or nylon. All material by Collins & Aikman Corp. Backing material optional, weight—50 oz.

No. of buffets—2; average electrical load capacity per buffet—5kw (customer furnished).

No. of lavatories—2; No. of washbasins—2, by Basco Metal Products Co. Washbasin mirrors (2), toilets, disposal tanks (2) by Lockheed. Royalite floor covering by U.S. Rubber Co. Receptacles provided for razors etc. (1) per lavatory).

Cabin ceiling lights—200, by Century Lighting Co.; passenger reading lights—72, by Wemac Mfg. Co. "No Smoking" lighted placards—3, by Lockheed. Passenger call switches—38, manufactured by Hetherington, Inc. Public address system (customer furnished). Intercommunication system by Telephonics Corp.

No. of passenger seats installed—85 plus 6-place lounge, max.; 66 plus 6-place lounge, min. Passenger seats manufactured by Aero-therm Corp., Hardman Tool & Engineering Co., TECO, Inc. or Weber Aircraft Corp. Lounge seats by Hardman. Average weight per single seat—30 lbs. Seat upholstery covering—nylon, by E. F. Timme & Sons or Collins & Aikman Corp. Seat attachments and mechanisms, Lockheed; hassocks, if used instead of foot rests, supplied by seat manufacturer; ash trays furnished by seat manufacturers. Safety belts, passenger Associated Suppliers Co.; crew—Pacific Scientific Co. Pilots' seat—2; flight engineer's seat—1, by Burns Aero Seat Co.

Life rafts/jackets (customer furnished); first aid kits—2 (customer furnished). Air outlets—72 custom, 91 standard, by Wemac Mfg. Co. Oxygen outlets—89, Aro Equipment Corp. Potable-water systems—2, located in lavatory and buffet, manufactured by Lockheed. Fire extinguishers—3 in cabin, 1 in cockpit, by Walter Kidde & Co., Inc.



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later being promoted to Project Engineer. Presently, he is Project

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The headlines of our nation's newspapers proclaimed the speed of the F-101 Voodoo after "Operation Fire Wall", conducted in late

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ization deserves special accolades

since it was the F-101A model of

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new world's speed record of 1207

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Japanese Motif in Seats

Aerotherm units designed for Japan Air Lines feature distinctive oriental elegance

Some foreign airlines, while using American aircraft and equipment, manage to retain their individual national flavor by clever styling touches. An example is the seating designed and built by The Aerotherm Corp. of Bantam, Conn., for Japan Air Lines' fleet of DC-7Cs.

Though they contain the most modern features, the seats are given an Oriental flavor by the use of special upholstery material. It is a deep-piled mohair with a delicate floral pattern created by Japanese artists in keeping with the line's symbols for its luxury and tourist services.

Kiku, or chrysanthemum, blossoms are used on the deluxe seats. These units also include leg rests, multi-position footrest, drink holders and sockets for front-mounted tables. Tourist-class seats have sakura (cherry blossom) figures and feature integral "Aerotables" which stow in the seat backs and can be used without interference even with the seats in the fully reclining position.

Seat cushioning is deep, contoured foam rubber. Armrests are leather, covered in colors to complement the molded Boltaron side and kick panels.



JAPANESE flower motif is evident in Japan Air Lines' DC-7C. Seats built by Aerotherm Corp. have armrest that folds up between cushions and comfortable leg rest.



REAR VIEW of JAL's seats by Aerotherm shows "Aerotables" in folded position.

TION

Svelte Is the Word for Vertol 44B Interiors

The Vertol 44Bs that go into service with New York Airways this spring will have 15 seats in conventional air-

line arrangement.

The single row of double seats are of a wine-red nylon honeycomb "Candelon" upholstery, trimmed in antique white Naugahyde, a simulated leather. The nylon material is furnished by Collins and Aikman, New York, and the Naugahyde trim by U.S. Rubber Company.

Flight Equipment and Engineering Corp., Miami, built the seats to Vertol design. All interior installation and covering was done by the Vertol shop.

Floor covering is a mixed green and tan cotton loop tweed carpeting, "Heathcliff", from James Lees & Sons, Bridgeport, Pa. The lower wainscoating and the bulkheads at either end of the aircraft are turquoise plastic DuraTrim. The cabin headlining is the same material in a perforated pale beige. Anodized gold reading lights and air vents complete the trim. The wall covering is furnished by Duracote Corp., Ravenna, Ohio. The lights and vents by Wemac Corp.

Framing the large windows of the Vertol 44 are turquoise-and-tan-stripe spun rayon and cotton curtains, with a gold basket-weave Mylar valarce.

Chrome luggage racks along or side of the aircraft will provide space for the passenger's carry-on luggage.

Individual seats in this airliner can be detached from one side and folder against the side of the cabin, providing cargo space. Thus the cabin can be utilized in combination of cargo/passengers or exclusively one or the other.

Outlets for heat are located under each seat, against the cabin wall.

VIEW LOOKING FORWARD in the cabin of the 15-passenger helicopter. Well-insulated, noise level is said to be as low as most airliners flying today.





CONVENIENT BAGGAGE RACK is rangement should prove popular. Sain may be collapsed and folded up to sin to make room for extra bulky lugges.

Aircraft Furnishings Supplement

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ON THE FOLLOWING PAGES SEE HOW AC SPARES

ON THE FOLLOWING PAGES SEE HOW AC SPARES

NEITHER TIME NOR EFFORT TO BUILD THE BEST ...

WHERE EVERY RESOURCE OF CHEMICAL, METALLURGICAL, ELECTRONIC AND APPLIED SCIENCE IS DEVOTED TO THE QUALITY-CONTROLLED AND AND EXHAUSTIVE TESTING WHICH INSURE AC AIRCRAFT PRODUCTION AND EXHAUSTIVE TESTING WHICH INSURE AC SPARK PLUG RELIABILITY!



SPECTOGRAPH analyzes materials both quantitatively and qualitatively to an accuracy of one part in one-million! The spectrum of a blinding arc of the material is recorded photographically for analysis.



ELECTRON MICROSCOPE photographs shapes and sizes of crystals in insulator materials and how these materials bond together. Pictures are studied by carefully trained technicians to insure that all insulators meet the most rigid specifications.



RUBBER MOLDS automatically form insulator blant with precise accuracy through modern compression methods. After molding, the blanks are precision growto insure uniformity in length and contour. This method is typical of AC's uncompromising accuracy.



KODAK CONTOUR PROJECTOR magnifies the profile of the insulator blank ten times to be sure it coincides perfectly with the king-size master template in every detail.



KILN CONTROL PANEL accurately measures both time and temperatures for the all-important insulator blank firing and glazing processes from four stations in the automated high-temperature kiln.



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LIGHT BEAM TEST illuminates the entire fired insulator blanks from the interior to disclose even the slightest imperfection. After this check, insulators are assembled into plugs for engine dynamometer test.



INSULATOR ASSEMBLY—here the center electrode wire is matched to the body and the ceramic-metal sealing powder loaded for firing in the electric glass-seal furnace. The leakproof ceramic-metal seal is exclusive with AC.





PLATE INSPECTION of every insulator assembly insures 100% perfection.

The can pass its physical, every AC aircraft spark plug insulator assembly is subtined to the final X-ray test. Plates are made of groupings and technicians scan them to the rejects. All plates are read in special, darkened booth.



DIAMOND GRINDING of insulator shoulder is confined to extremely close tolerances. This final precision operation insures perfect matching of insulator and the spark plug shell.



INSULATOR ASSEMBLY INSPECTION includes high-voltage electric current, Zyglo dye, black light, visual plus X-ray for each spark plug of the entire production.



MACHINING AND PLATING are done by the most modern methods, many of them conceived and perfected by AC. This scene is only a portion of the vast facilities devoted exclusively to the production of AC Aircraft Spark Plugs.





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FINAL ASSEMBLY where the insulator assembly i mated to the shell. Starting with a resistance check of the insulator, the finished aircraft spark plug begins to be shape. After the shell components are in place, they are crimped, welded and brazed to form a leakproof unit. unit must then pass a 1,000 p.s.i. air test.

here at



MEN, MATERIALS, **MACHINES** combine to build aircraft spark plugs that spark modern flight!



FINAL INSPECTION of the completed aircraft so plug includes visual inspection, resistance test, high-vulle bomb test and final X-ray. After checking the gap size in extreme accuracy, the spark plug is dated for factory n

AC's spark plug facilities are designed to serve the flight requirements of the aviation industry and the public!

IT TAKES THE PERFECT COMBINATION of manpower, materials and machines to produce a superior product. That rare combination is inherent in every AC Aircraft Spark Plug . . . militaryairline-private plane.

At AC, experienced engineers, craftsmen, inspectors—devote themselves exclusively to the advancement of aviation through the manufacture of the finest spark plugs.

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AC machines for precision production, many of them engineered for particular applications, are used solely for the fabrication of reliable AC Aircraft Spark Plugs.

PACKAGING AND LABELING is the fine! slep to sending the AC Aircraft Spark Plug into action! Above t e special packaging operation to insure the military d receiving AC Aircraft Spark Plugs that are factory-fresh

FLYING STARTS WITH



AC's line of long and short-reach spark plugs include a full line of both massive electrode and fine wire types.



AC's line of jet / Cniters spark the jets, turbo-props, rocket and missiles of today ... and the future!

AIRCRAFT SPARK PLUGS

F-27-Latest in Design for Local Lines

In the not-too-distant future—early this summer—airlines and other corporations will be operating Fairchild Aircraft Div.'s F-27 Friendship twin turboprop transport as a replacement for Douglas DC-3s and early Convairliners. First delivery of the local service, 40-passenger version will be made to West Coast Airlines late next month.

Passengers will enter the 280-mph aircraft by way of an integral stairway to the main entrance door on the left side of the fuselage at the rear end of the cabin. Coat storage, galley and lavatory all are located aft of the cabin

with the result that passengers are seated in the area of the wing.

Many consider this a more comfortable arrangement in flight. There is less feeling of sink and swing in turbulent weather.

The F-27 features automatically controlled air conditioning and pressurization to maintain a cabin altitude of 8,000 ft. at true altitudes to 20,000 ft. Air-conditioning system is by Fair-child's Stratos Div.

Normal cabin layout for a 36-passenger interior calls for nine rows of four-abreast seating. Competition among seat suppliers for the twin-turboprop includes more manufacturers than any of the bigger jets. Although the standard model selected by Fairchild (its own specification) is built by Aerosmith Div., L. B. Smith Aircraft Corp., no fewer than three other firms are competing for F-27 business. Among these are Burns Aero Seat Co., TECO, Inc. and Flight Equipment & Engineering Corp.

Interior of the executive version varies per customer desires. In general seating arrangements accommodate about 12 passengers,





PAYLOADER SEAT by Flight Equipment & Engineering Corp. is for combination passenger/cargo operations.



SEATS SELECTED by Fairchild for the 40-passenger version are manufactured by Aerosmith Div. of L. B. Smith Aircraft Corp. Headroom in aisle is almost seven feet. Attendants' compartment at rear of cabin.

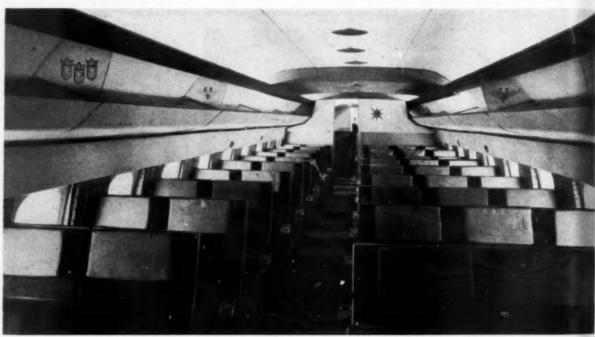
FUNCTIONAL BUFFET is manufactured by Ludwig Honold Mfg. Co. and thermos containers by Mansfield Aircraft Products Co. Galley in photo is that proposed for executive version. Forty-passenger galley is similar.



SEAT OFFERED for F-27 by Burns Aero Seat Co. has notched recline mechanism no shrouds or kick plates, weighs 34 lbs.

Furnishings for the Bis

The DC-8



WIDE AISLES, WIDE SEATS, wide and high overhead arches give Douglas DC-8 clean, spacious lines. Company builds

its own seats. Head room in aisles is ample: 7 ft. 2 in. Two passenger entrance doors are on left side.



FINGERTIP CONTROL of service fixtures in DC-8 is provided for passengers. Each seat has built-in cold air outlet.



OVER-THE-SHOULDER reading light on each DC-8 set directs diffused beam at eye level.

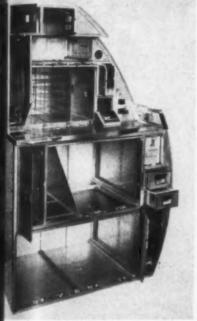
MA

BS. Turbojet Transports

The 707-120



STANDARD 707 seat is Boeing design, will be built by Hardman.



JET GALLEY developed by REF Manufacturing Corp. for use on 707.



MAIN CABIN of 707 resembles that of original mockup, however the depth of overhead passenger service units has been reduced considerably from that originally shown.

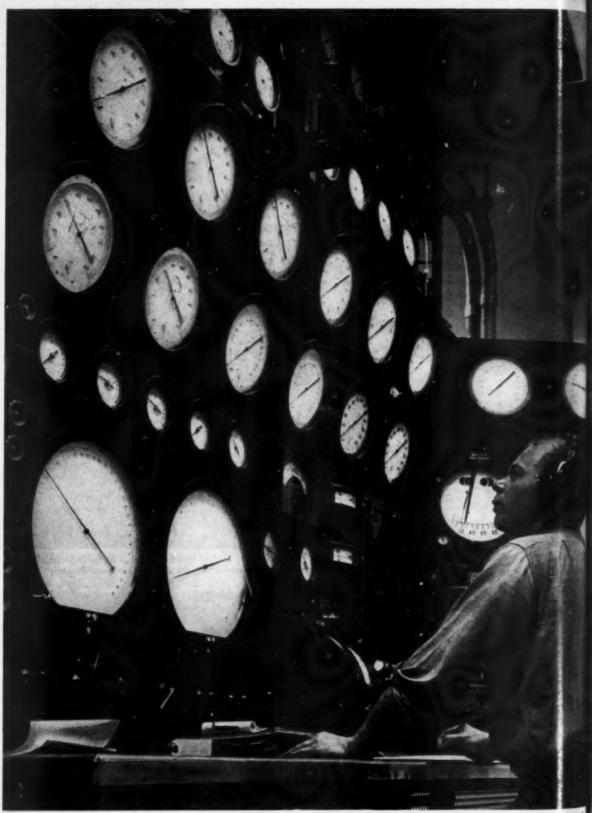


LOU! GE COMPARTMENT in the big Boeing jet is spacious by presentday piston transport standards, is separated from direct view of cabin passengers.



HOME-LIKE POWDER ROOM in Boeing 707-120 is ultra-modern in styling.

ATION



This extensively instrumented test bench is located inside one of the test cells in Pratt & Whitney Aircraft's Fuel Systems Laboratory in East Hartford. In this chamber rengineers can minutely analyze the effect on fuel systems

components of extreme environmental condition—such as those encountered in advanced types of aircra t operating at high Mach numbers and high altitudes. This is one of many P&WA facilities unequalled in the in lustry.

FUEL SYSTEMS LAB

Another Unmatched Facility to Improve Fuel System Capabilities for Turbine Engine and Missile Application

Fuel handling and control problems for turbojet engines capable of powering sustained Mach 2 flight are enormous. Some are still unsolved despite years of effort. But problems of this type for engines of the future—for aircraft to fly at Mach 3 or 4—are almost beyond belief in their complexity.

The Fuel Systems Laboratory at Pratt & Whitney Aircraft helps to solve such problems and many others in the design, development, qualification, and calibration of fuel controls and related engine parts, by permitting operation of these units at the conditions encountered at high speeds and high altitudes.

This multi-million dollar laboratory, unduplicated anywhere in the aircraft engine industry, was built and is owned by Pratt & Whitney Aircraft. Fuel handling test environ-

ments are provided from -65°F to 1000°F, and up to 60,000 feet in simulated altitude. A variety of fuels can be handled through a great range of flow rates, pressures, temperatures, and operating conditions.

Because of Pratt & Whitney Aircraft's foresight in making available this kind of facility, and the many other matchless tools and facilities which engineers at Pratt & Whitney Aircraft may call upon, the uniquely successful J-57 and J-75 turbojet engines have been made available to the world of aviation.

In these facilities, the next generation of aircraft power plants is now being brought along. And such facilities will be even more important in future years in the design and development of the world's best aircraft propulsion systems... in whatever form they take.



Pratt & Whitney Aircraft's J-57 engines power the outstanding Boeing KC-135 tanker-transport, shown refueling a McDonnell F-101, also J-57 powered and holder of the world speed record of 1207 mph. In April a KC-135 set a distance record for jet aircraft

without refueling, flying 10,228 miles from Tokyo to the Azores. Facilities at Pratt & Whitney Aircraft such as the Fuel Systems Laboratory are behind the success of J-57 and J-75 turbojets in so many types of transports, bombers, and fighters.



Pratt & Whitney Aircraft

Division of United Aircraft Corporation, East Hartford, Connecticut
CONNECTICUT OPERATIONS—East Hartford. Major Branch Plants—Meriden, North Haven, Southington
FLORIDA OPERATIONS—West Palm Beach

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880's Cabin Comes in Three Versions



CEILING OF 880, shown in this mockup, is varied in height to create a compartmentalized effect without resorting to the use of actual partitions.

Convair's 880 medium-range jet transport, now on order by TWA Delta and Capital Airlines, is now slated for certification by CAA about April 1.

The interior arrangement, proposed in three versions, will accommodate from 72 to 109 passengers depending on the layout selected.

Standard 880 interior (with lounge) has 72 four-abreast seats plus a lounge for 12 persons. Another standard layout (without lounge) also is four abreast and seats 84 passengers.

In a straight coach interior, Convair has proposed a cabin arrangement with 21 rows of seats, five abreast, and a single row, four abreast, in the aft cabin.

A buffet for food service, coat compartment, stewardess seat and lavatory are situated forward of the cabin in all models. An additional buffet for liquid service, a stewardess seat and second lavatory are located in the aft cabin.

In the two standard versions, a mid-cabin coatroom is employed as a partition to break up the length of the cabin. As an additional measure, to eliminate "tunnel effect" in the longer jets, Convair is varying cabin ceiling level at strategic intervals.

Seats in the 880 are a design developed by Convair and will be produced by National Seating Co., a new entry in the aviation field.



AIRBORNE CLUB COMPARTMENT, planned for the Convair jet, will seat 12 per- FOOD SERVICE in the jet age discards sons compared to about five or six in most lounges of presentday piston transports.



completely the concept of "tray on lap."

DELTA

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Easier to sell because they

Fill every Dream - Fit any Budget!

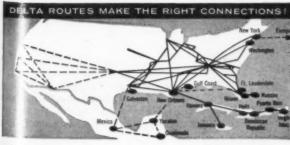
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New this year: MIAMI BEACH MOTEL VACATION

including round trip by air, Rambler with 100 mile driving allowance, choice of 6 top beach Motels.

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MIAMI BEACH HOTELS • FT. LAUDERDALE • HAVANA
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and GULF COAST • YUCATAN • GUATEMALA • MEXICO
NEW YORK • WASHINGTON and many others



USE DELTA'S FULL RANGE OF FREE SELLING AIDS

- Vacation Folders—most colorful and persuasive in the industry.
- Displays—for both window and counter; compact, high-powered.
- Posters—smash-hit destination designs.
- Vacation Sales Manual—new, complete, easy to use, saves you time.

Plus heavy-concentration advertising support



27 PARTICIPATING AIRLINES LISTED IN FOLDERS

Air France Allegheny American BOAC Braniff BWIA Central Continenta Cubana Eastern KLM Lake Centra

National North Central Northeast Northwest Ozark Piedmont Southern Trans Canada Trans Texas TWA United

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Custom Interiors — Horton and Horteyl



LUXURIOUS FABRICS AND LEATHERS in dozens of color combinations point up these Bell helicopter interiors, done exclusively by Horton and Horton of Fort Worth.



• Fancying up the insides of gircraft

- Family crests on the bulkhead
- Red carpets and blue sugar
- Colored leathers and fabrics
- No unreasonable request refused

by George R. Shaw, Jr.

"Custom designing an aircraft interior is a combination of art, aero-nautical engineering and giving the customer exactly what he wants," says Bob Horton, co-owner with his wife, Dorothy Anne, of Horton and Horton Custom Works, Inc.

Located on Fort Worth's Meacham Field, Horton and Horton is the only firm in the country devoted exclusively to designing and fabricating the interiors of other people's airplanes. And, according to the Hortons, it's the most fascinating area of activity in the aviation field.

To date, the firm has designed and fitted the interiors of over 500 airplanes, and the customer list sounds like the who's who of private plane owners. In 1957 alone the Hortom fitted out 196 separate aircraft, ranging from a DC-6A conversion to customizing a Bell 47J helicopter for the president of Colombia.

The DC-6A job was H&H's first departure from their previous policy of dealing solely with business-executive type aircraft, which included both fixed-wing and rotor craft. In only 49 days the Horton firm engineered, designed and fabricated the interior of one of Overseas National's DC-6A cargo planes for quick-change to all-cargo, cargo-passenger and all-passenger application. Performed to MATS specifications, the job was so successful that it led to a contract from the airline for a similar conversion job on two more of their DC-6s.

The Horton order book is filled with unusual requests for custom fittings and with big names. Of 26 Bell 47J helicopters customized last year by the Hortons one went to Florida millionaire Arthur Vining Davis, another is owned by Arthur Godfrey and two are being used by the White House.

UPHOLSTERED SWIVEL CHARS, roomy divan and tables create "flying confence room" in this H&H Gold Creat interior of C. L. McMahon's Beech D-188.

AMERICAN AVIATION

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Still another of the 47Js was purchased by the New York Police Dept.'s Harbor Patrol and is used to transport VIPs around the Port of New York Authority's vast waterfront and airport complex.

One of H&H's "plushiest" efforts last year was a custom job on a de Havilland Heron owned by the National Bank of Mexico. The bank's president, Augustin Legoretta, visited the Horton plant to discuss the details of the job, said to be one of the finest custom jobs ever performed on an aircraft. The Bank of Mexico calls this plane Mark 1, Champagne Series.

The Heron conversion is one of the Gold Crest Custom series. Aircraft fitted with the Horton-created family crest design are becoming familiar all over the world. Started as an "extra touch" for customers who wanted to personalize their aircraft interiors, the Gold Crest is usually a family or company crest, stamped in gold and mounted on the bulkhead over the cockpit doorway.

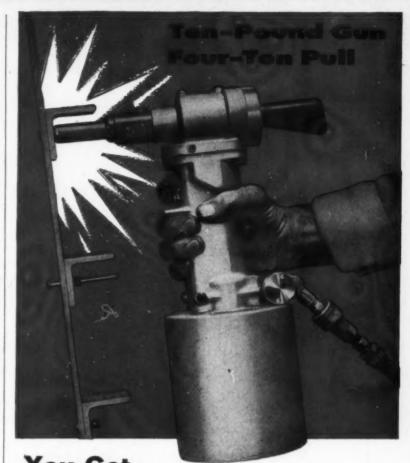
So many requests are being received for just the crest that this single item has developed into a very lucrative sideline for the company. Kilroy Oil Co., Spencer Chemical Co. and Tennessee Gas and Transmission Co. are but a few of the scores of company plane owners that have ordered the crests.

Doing business on the scale of the Horton operation involves considerable purchasing of materials, as well as employment of design experts and craftsmen of the first order.

Of the former, Bob Horton agrees that the company's requirements for materials are both specialized and extensive. "We have to have the best materials available," he said, "and this means that we purchase from firms from one end of the country to the other."

No matter how strange the customer's request may sound, Horton and Lorton will not laugh it off. For examile, the company has even supplied blue sugar for airborne coffee service by a foreign dignitary.

leather and fabrics are purchased in every color and hue in the spectrum. Design engineers go over every detail of th customer's specifications to preserve the airplane's aerodynamic character tics and safety features. Every job, i addition to enhancing the plane's looks and comfort, must conform to CAA and CAB regulations, and sometimes even MATS gets into the act.



You Get **MORE POWER—Less Weight** with the New CHERRY G-85 Lockbolt Gun

The new Cherry G-85 lockbolt gun is designed to give you maximum pulling power with less weight. Its simplified rugged construction assures low maintenance costs. The gun weighs only 10.5 pounds, which reduces operator fatigue.

No special air supply is required with this lightweight gun, because

aircraft fasteners, Cherry Research Santa Ana, California.

and Development department has produced this new lightweight, high capacity gun to increase the efficiency of installing lockbolts.* The G-85 gun may be adapted for setting stainless steel, monel, aluminum and carbon steel Cherry blind rivets.

For information on the new it develops this high capacity at Cherry G-85 gun write Town-normal line pressure. Send Company, Cherry Rivet As the leader in the field of special Division, Post Office Box 2157-Y,

*Licensed under Huck patents RE22,792; 2,114,483; 2,527,307; 2,531,648; 2,531,649 and 2,754,763

CHERRY RIVET DIVISION

Townsend Company

No wonder connecting airlines route so many of their passengers via United. United offers weather-mapping radar on every plane. Luxurious Red Carpet* Service Exclusive DC-7 Custom Coach flights hot meals included in the low fares. Convenient schedules along a Main Line route covering 80 cities coast-to-coast and Hawaii, with over 800 flights each day.

9Red Carpet is a service mark owned and used by United Air Lines, In



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Continental: A Case Study in Growth

by Eric Bramley

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TION

DENVER-Continental Air Lines' objective, says president Robert F. Six, is to be a big, strong regional airline. And, he adds, it's getting there.

To reach this objective, CAL has been moving ahead rapidly. Three short years ago, the company was a relatively small carrier. Since then, its growth has been explosive. Here's what's been done and what's upcoming:

1955-Merged with Pioneer Air

1957-Opened Chicago-Los Angeles service—the biggest route award in the company's history.

-Integrated four DC-7s into its fleet delivery of a fifth is expected in the near future).

1958-Next week, service starts with Viscount IIs—a program that is costing \$27,665,984.

959-In February, CAL takes delivery of the first of four Boeing 707 jet transports—a program that will cost \$29, 14,258.

Thus, in three years, CAL will have integrated three different types of equipment into its fleet, in addition to opening a major new route. On the horizon, it hopes, is another major route-1,400 miles from Dallas to Los Angeles and San Francisco. A Civil Aeronautics Board examiner has recommended this extension for CAL.

It is moves like these and expenditures like these that have caused some other carriers to suggest to the CAB that CAL has bitten off more than it can chew and is about to suffer a severe case of indigestion. In short, the claim is that CAL is close to being broke and can't find the kind of money needed for its equipment programs.

Bob Six scoffs-emphatically-at this claim. The company is not going broke, is not planning to sell its 707s, and is not going to have any difficulty getting the money it needs, he says. He adds, just as emphatically, that the goal of being a big, strong regional airline will be attained.

The 15 Viscount IIs (costing \$1,412,000 each, delivered in Denver ready for service) are being financed in England, and the terms of this financing have never been revealed. Financing for the four Boeings (\$4.6 million each without spares, for delivery in February, April, May and June, 1959) will be arranged. At press-

- Cost Breakdown -CAL's New Equipment

The high price of introducing new airline transports is graphically illustrated by the following table, which gives the complete cost of Continental Air Lines' 15 Viscounts, equipment and other expenses:

Flight Equipment

Aircraft (15)—complete	\$20,846,024
Spare engines (28)	1,923,040
Aircraft propellers (21)	275,253
Flight equipment rotable parts	
and assemblies	1,230,000
Total Flight Equipment	\$24,274,317
Ground Equipment	
Passenger service equipment	\$ 141,638
Hangar, shop and ramp equipment	665,900
Motorized vehicles and equipment	366,000
Office furniture and equipment	22,609
Storage and distribution equipment	27,000
Engine test facility	264,400
Improvements to leased property	45,000
Total ground equipment	\$ 1,532,547
Total agulament	63E 004 044

Total equipment \$25,806,864 \$ 823,000 1,036,120 Pre-operating Expenses

TOTAL VISCOUNT PROGRAM \$27,665,984

. . . Continental: A case study in growth

time, plans for this financing were being put in final shape, contrary to published reports that they were being postponed.

At present, major emphasis is on the Viscount II, scheduled for service May 28. This will be the "fastest airliner in America," says CAL, and its competitors so far have not quarreled with this claim. CAL's Viscount II has been described as a custom-built job. It's a stronger, more rugged airplane than other Series 800 Viscounts now flying. Powered by four Rolls-Royce R Da7/1 turboprop engines delivering 1,910 total equivalent horsepower each, it will cruise at 365 mph with a full

Later, in 1959, some of the planes will be re-engined with R Da 11 powerplants, of 2,350 horsepower. Cruising speed then jumps to 406 mph.

"We are convinced," says Six, "that the Viscount is a money-making airplane, provided you have a long leadtime and integrate them slowly.'

CAL's long lead-time, he believes, has enabled it to avoid mistakes in planning and to get its house in order prior to start of service. As of the first week of May, 14 crews had already been trained and were ready to go (111/2 hours in a Viscount 745 leased from Vickers, three to four hours in

Maximum Serviceability-

the Viscount II, plus 50 classroom hours). All dispatchers had been trained (108 hours). Kerosene contracts had been signed and facilities installed. Sales promotion had been under way for a long time. Advertising was set to go. Still to be settled with the CAA was overhaul time on the engine.

Integration will be purposely slow. Four airplanes will be on hand by the end of May and two will be added each month thereafter.

In 1958, CAL figures the direct flying costs of the Viscount at 85.07¢ per airplane mile. In 1959, when the plane is shifted to shorter-haul routes. this will rise to 90.38¢ (costs on the 44-seat Convairs are 83.16¢).

With a first-class passenger yield of about 7¢ a mile, 13 passengers will be needed on this 52-seat airplane to cover direct flying costs. CAL's indirect costs run less than the direct, and a "horseback" estimate would be that 24 passengers should cover all costs. This is a break-even load factor of 46.1%.

The Viscount II will enable CAL beefup its Los Angeles-Chicago route substantially. Last summer, for example, it had three nonstop DC-7B coaches Los Angeles-Denver. This summer it will have four first-class Viscount roundtrips and two DC-7B coaches. Denver-Chicago will have three nonstop, one one-stop and one two-stop Viscount schedules plus one nonstop and one one-stop coach against three coach flights last summer

With this service, CAL is forecast. ing that its penetration of the total market on these segments, plus La Angeles-Kansas City, Los Angeles-Ch. cago and Chicago-Kansas City, will take a big jump. For competitive ressons, these forecasts aren't made pub. lic, but on some segments the penetration of the market is expected to more than double.

In the long run, however, the Viscount isn't intended for the Los Ange. les-Denver route. This will be taken over next spring by the Boeing 707. and the Viscount will be concentrated on the high-density routes now operated with Convair 340s and 440s, such as Denver-Albuquerque, Denver-Kansas City, Denver-Tulsa.

"The Viscount fits our Convair pattern like a glove," Six states.

If CAL is awarded a route from Dallas to the West Coast, this will be its equipment picture: 13 DC-3s (3 owned, 10 leased), seven Convairs (two of the present fleet of nine will be sold), five DC-7Bs, five DC-6Bs (three owned, two leased, all used on interchanges with United and American), 15 Viscounts and four 707s.

If it loses the Dallas-West case. CAL will either sell all its Convairs or



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Model of the X-405 Engine, showing the Aeroquip Fuel Assemblies.

<u>problem:</u> design fuel manifolds to accommodate gimbal action on the first stage Vanguard engine



Aeroquip Solved it with High Performance Hose and Tube Assemblies

Aeroquip—leading producer of flexible hose lines AND precision tubing—was the logical source for the two fuel line assemblies on the General Electric X-405 engine that powered the first stage of the Vanguard Vehicle.

Aeroquip 601 Lightweight Engine Hose, used in connection with tube assemblies, made it possible for the fuel lines to adjust to the gimbal action of $\pm 5^{\circ}$ in either plane to control the vehicle's direction.

Other Aeroquip products on the Vanguard included High Pressure Hose Lines for the hydraulic system, and KEL-F Hose for the safe transfer of nitric acid during fueling.

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KEL-F is M. W. Kellog's trade name for fluorocarbon polymers Teflon is Dupont's trade name for its tetrafluoroethylene resin

super gem is an Aeroquip trademark *U. S. Patent Nos. 2,833,567 and 2,731,279

. . . Continental: A case study in growth

use them to replace DC-3s on some routes. It will also sell some DC-7Bs.

By July of this year, when it has six Viscounts, the airline will be operating 57,150 miles a day (41,954 miles now). Of little help, however, is the fact that 14,031 are DC-3 miles—unsubsidized—on which the company loses \$1.5 million a year.

The Viscounts will be overhauled in Denver, both airframes and engines. At Denver, CAL has just constructed a 111-ft.-long engine test cell for the Dart engine, the only facility of its kind in the U.S. Test equipment was purchased from John Curran Ltd., of England.

The building also contains water demineralization equipment and facilities for testing the Viscount's air-conditioning system. Total cost of building and equipment was \$264,400. CAL will also be able to handle engine test work for local service lines operating Dart-powered F-27s.

Boeing 707 airframe overhaul will be done at the company's new Los Angeles maintenance base, which will also continue to handle the DC-7Bs. The 707's Pratt & Whitney J57 engines will be farmed out to Pacific Airmotive.

The Viscount will be scheduled about five minutes faster than the DC-7 in summer, about 15 minutes faster in winter. CAL plans to cruise the plane at 21,000 to 25,000 ft. on the longer hauls, primarily for fuel economy (fuel cost is figured at \$52.95 per hour). And when the airplane enters service it will do so at a very respectable 9 hrs. 36 mins. a day utilization. As more airplanes are introduced, this will fall to 8:49 (present system average is 9:19).

The "Gold Carpet" passenger service planned for the Viscount is an eye-opener. Gold is the theme throughout—gold carpet, gold furnishings, gold silverware (Direlyte, with a three-piece setting costing \$5). The airplane, has 52 Aerotherm seats (plus a four-seat lounge) which are larger than DC-7 seats.

Meals will be served from a gold cart. Breakfast will be juices, eggs, pork chops, sausage, ham, etc. For lunch there will be a choice of four entrees—filet, lobster thermidor, cold ham or beef plates, ham salad (the passenger makes his selection on the telephone when he calls for a reservation).

Dinners include steaks, roast beef and chicken. Baked potatoes will be wrapped in gold foil. Golden champagne will be served. Women passengers will receive golden carnations. Liquor service will be available at \$1 a drink (vodka martinis were recently added because of numerous requests). The newly-designed taupe-colored hostess uniform includes a one-piece sheath dress, bolero jacket and a white straw beret. At mealtimes, hostesses don gold-colored smocks and remove the berets.

An extensive passenger survey has revealed the somewhat startling fact that passengers definitely do not like music in flight. They enjoy it during stops, but not for long periods of flight. The reason seems to be that engine noise and music don't mix, according to Lynn Dennis, v.p.-passenger service (who, incidentally, spends two to three mornings a week at the Denver terminal buttonholing passengers for their comments and suggestions on CAL's service).

CAL, therefore, is not installing music equipment on its Viscounts. Instead, this equipment is being placed on the ground power units and will be in operation during stops.

CAL is kicking off the Viscount program with an extensive advertising program in 13 newspapers in four cities and in 18 trade papers and magazines. "First in the west with jet-power flights" and "See, hear and feel the difference" are two of Continental's selling themes.

Giveaway items include baggage tags, key rings and other gimmick Over one million pieces of direct-mal promotion will go out this year. I. Walter Thompson is the ad agency. Charlie Bucks, passenger sales manager, has arranged tie-ins with some 25 manufacturers to produce "Viscount" products (belts, ties, handbag, tuxedos, etc.).

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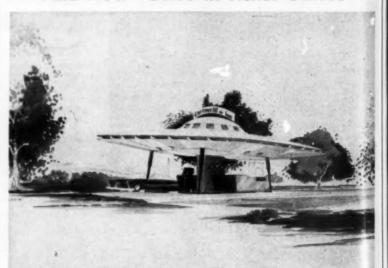
MA

Sales and advertising expenses this year will tot... \$2,465,200 against \$2,190.645 in 1957.

What does a major new route do for a carrier like Continental? Los Angeles-Chicago service has just finished its first year (Apr. 28). In eight months of 1957, this route produced 95,589,545 passenger-miles (all coach), a 51.70% load factor, 44 passengers produced 363,096,627 passenger-miles in 1957. Thus, Los Angeles-Chicago accounted for 26.33% of the total.

In passenger revenue, the route came through with \$4,383,363, or 20.51% of the system total of \$21,373,972. This route award, however, did not change CAL's comparative size in the industry. It's still next to be revenuewise. The reason, of course, that other carriers' systems were also being enlarged by CAB route awards. Despite a bad first quarter (\$307.

And Now-Drive-in Ticket Offices



Portable drive-in ticket offices, for use in outlying areas, at shopping centers, etc., are planned by Continental Air Lines. The unit, of a "flying saucer" design, is glass-enclosed and air-conditioned. It has two ticket counters and on the right is a ticket window for servicing customers directly from their cars. CAL proposes to buy or lease land for the offices.

Built in sections, the unit can be torn down, shipped to a new location and re-assembled within two weeks. Price is estimated at \$22,000 each for not less than six. CAL is about to build a prototype, estimated to cost \$45,000.

The division unit was invented and patented by Richard G. Schorling, CAL's assistant v.p.-purchasing and properties. 175 loss against a \$63,232 profit last year) CAL is forecasting a profitable 1958. Figuring prominently in this forecast are the Viscounts, which are being counted upon for deeper penetration of the markets and for stimulation of new business. Harding Lawrence, v.p.-executive administration and sales, notes that, starting with the Viscounts, CAL will be ahead of its principal competitors, equipmentwise, for some time.

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What of the future? On equipment, Six thinks the airline is all set. By 1963, however, he may want to consider a small jet, such as the proposed DC-9, to replace some Viscounts.

On mergers, none is being considered at this time. Contrary to rumors, a merger with Capital Airlines is not in the cards. Six admits that there are a couple of carriers with which CAL could merge advantageously. He thinks that in a few years CAL will be attractive mergerwise—in good shape financially, equipmentwise and routewise.

But no one is counting on a merger. The objective, Six repeats, is to be a big, strong regional airline.

American Still Leader In Domestic Airfreight

American Airlines is still the No. 1 carrier of domestic airfreight, not the Flying Tiger Line (as reported in AMERICAN AVIATION, April 21, p. 52), according to records filed with the Civil Aeronautics Board.

In 1957, American flew a total of 86,063,699 airfreight ton-miles, as compared with 82,986,089 for the Flying Tigers. Thus, over-all, American topped FTL by more than three million ton-miles.

In scheduled domestic services, American's figures were even more impressive: 82,408,269 ton-miles, as compared with 58,128,523 for FTL. American also flew 77,877 freight tonmiles in domestic charter services.

However, in international scheduled and charter services business, FTL chalked up 24,857,566 ton-miles against 3,577,553 for American.

Rolls-Royce Initiates Overhaul Program on Dart

Rolls-Royce of Canada has initiated overhaul of the Dart turboprop engine at Montreal. First Darts to be processed at the new facility were Cubana Airlines Viscount engines removed after 1,500 hours of operation.

kolls-Royce does not plan to confine verhaul activities to the Dart and has constructed a test cell capable of handing engines up to 7,000 shp with fligh propeller installed. This cell will pern it overhaul of the company's Tyne

turboprop selected for Trans-Canada Air Lines' Vickers Vanguards and the Canadair CL-44 transports scheduled for the RCAF.

Oakland Airmotive Finishes Pressure Tests on Centaurus

Oakland Airmotive has completed CAA structural "fail safe" tests involved in pressurization of its Centaurus, recently announced conversion of Lockheed's PV-2. At an altitude of 18,000 ft., cabin altitude of the Centaurus will be 8,000 ft. Pressurization will add about \$150,000 to the cost of the 280-mph business aircraft which, unpressurized, is priced at under \$200,000.

In Case You're Planning To Visit Brussels Fair

Motel rooms near the Brussels World's Fair are expensive, but not nearly so expensive as reported in AMERICAN AVIATION, May 5, p. 34.

Wrote International Editor Anthony Vandyk: "And come to Brussels with plenty of money—prices are sky-high (a room in my unheated motel with no bathroom or toilet costs £12)." Obviously, it should have been \$12. A room with bath in the Parc Motel, only a few hundred yards from the fair grounds, costs 740 Belgian francs for one, or \$14.80 in American money. And that's about the most expensive.



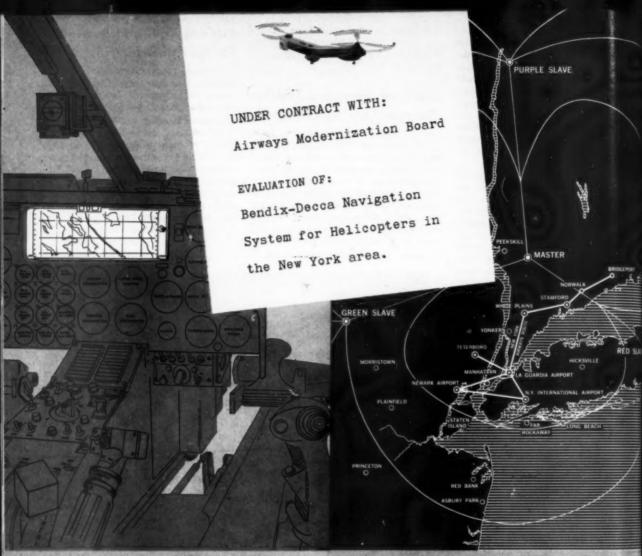
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Among its many features Bendix-Decca continuously shows the exact position of the aircraft on a moving map in the cockpit.

The Bendix-Decca New York chain covers an area of approximately 200,000 square miles. The map shows the location of some of the routes being flown by New York Airways.

Bendix-DECCA...THE HIGH-ACCURACY NAVIGATION SYSTEM

Bendix-Decca, the all-weather visual navigation system, is now undergoing operational evaluation on helicopters of the New York Airways under supervision of the Airways Modernization Board. The program will evaluate to what extent a high accuracy hyperbolic system with a pictorial cockpit presentation will enable helicopters to achieve precision navigation down to the ground and be integrated into high density fixed wing terminal area operations.

Bendix-Decca was selected by the Airways Modernization Board because it is the only such system that is operational at the present time. An original United States development, the system is being evaluated for use in helicopter, fixed-wing airplanes, and vessels, in Canada. A long range companion system known as Bendix-Dectra is also in operation across the Atlantic. In Europe the system provides a regular navigation service covering approximately 2 million square miles to both air and marine users.

Write for the complete Bendix-Decca story.



TRANSPORT TRENDS

- Commerce Secretary Sinclair Weeks has gone on record before a House committee as believing that the airlines' interim fare increase (4% plus \$1) is "not adequate." If an airways user charge is adopted, increased cost to airlines should be offset somewhat by adjusted fares, he says.
- House investigators of Military Air Transport Service are putting the final touches on their report, which may come out this month. They're said to have concluded that MATS has failed to live up to a policy of a 20% split in military cargo traffic and a 40% split in passenger business with commercial carriers.
- Even if Congress grants every penny of CAA's fiscal 1959 budget request of \$438.7 million (see page 17), the agency may come back for supplemental money. Budget Bureau sliced \$24 million from the operation and regulation account. CAA says these funds are required for operation of navaid equipment to be commissioned next year.
- Resignations have been submitted by three Capital Airlines directors. But the fact that all three are on the airline's finance committee has been termed a "coincidence." Press of other business has been given as the reason for resignations of Thomas D. Neelands, Wall Street investment counselor; Harold B. Smith, Chicago industrialist; J. D. Stetson Coleman, of The Plains, Va. Capital, which has had major financial problems, hasn't acted on the resignations.
- Airlines expect welcome additional revenue from recent tariff change by which they eliminated stopover privileges to West Coast common-rated points. Air fare from New York to Los Angeles or San Francisco, for example, is the same. Formerly, a Los Angeles-bound passenger could stop over at San Francisco in both directions at no extra charge for San Francisco-Los Angeles trip. Now, if stopover is made, this leg must be paid (\$22.05 one-way first-class). In addition to producing revenue, new tariff will eliminate abuses—passengers asking for stopover privileges, never intending to use them, and turning San Francisco-Los Angeles coupons over to West Coast friends. Tariff also applies to other common-rated points in California area, plus Seattle-Portland.
- To prepare for upcoming let transports, airport planners are using this rule of thumb: a 10% to 12% increase in runway lengths. Airport aid requests are pouring into CAA, House Appropriations Committee was told.
- Two recent court decisions may spell trouble. A court awarded \$65,000 to a Savannah, Ga., housing company as compensation for jet noise damages. Company claimed Hunter AFB jets made so much noise that it was forced to abandon selling houses in the development near the field. Decision could lead to much litigation involving military and civil aircraft. In another case, a passenger sued an airline for several thousand dollars, claiming he was oversold. Court gave him the price of his ticket plus \$200, which may lead to similar suits.
- At least one transpacific airline is objecting strongly to tentative decision reached in U.S.-Japanese air talks to give Japan Air Lines landing rights in Los Angeles, in addition to San Francisco. In return, limitation on daily flights to Japan would be eased.

TRANSPORT At Deadline

Comet 4 Ready for Comeback

Flight tests of first 19 under way; BOAC plans to fly de Havilland jet this year

by Anthony Vandyk

LONDON—The de Havilland Comet is almost ready to stage its comeback. Late last month, a full four years since the grounding of the British jet, the first of 19 Comet 4s ordered by British Overseas Airways Corp. started its flight-test program.

Delivery of the first of the jet transports is due to start toward the end of the year. BOAC's present plans call for the introduction of Comet service on the North Atlantic this year.

BOAC's program involves the operation of a one-stop jet schedule from London to New York in under 11 hours' total time. Eastbound it is expected that the Comet will be able to make the New York-London flight non-stop in about seven hours. During 1959 the jet transports will be introduced on the BOAC routes to Australia and the Far East. In 1960 they will go on the London-Johannesburg route.

Some Decisions to Be Made

BOAC has not yet decided what configurations it will use for its Comets but probably the North Atlantic service will be operated with aircraft accommodating 56 first-class passengers. The Comet 4 can also be equipped to carry 66 mixed-class passengers or 71 in tourist-class accommodations.

BOAC's program for the Comet will not be finalized until the actual performance of the aircraft has been established and a certificate of airworthiness granted by the Air Registration Board. The first aircraft is currently undergoing an exhaustive flight-test program.

No trouble is expected by de Havilland officials in obtaining certification for the Comet 4, since much of the preliminary work has been accomplished by the extensive development flying program already carried out by the Comet 3. This aircraft, which has been flying since July 1954, has been progressively modified in many important respects to conform to the Comet 4 standard. In February 1957 it was re-engined with the Avon RA 29, the type of Rolls-Royce powerplant

specified for the Comet 4. Since then it has been able to accomplish about 80% of the test-flying necessary to obtain a certificate of airworthiness for the Comet 4. The RA 29, incidentally, has already been granted a full normal category certification by the Air Registration Board.

BOAC has been preparing for Comet operations by flying since last September two special Comet 2Es, each fitted with two RA 29s and two RA 9s (the RA 9 is the engine originally installed in the Comet 2). These two aircraft are currently making seven weekly roundtrips from London to Beirut and one from London to Nairobi via Rome and Khartoum. When the program is completed at the end of this month the Comet 2Es will have accumulated some 3,500 hours of flying, the equivalent of 7.000 hours with the RA 29.

The reliability of the Comet and the Avon engine has shown up very favorably in the Comet 2E shuttle-flight program. Since the flights started last September only two schedules have had to be canceled—both because of fog at London Airport. When the Comet 2E program got under way, the RA 29 was cleared for only 200 hours flying between overhaul. It is now up to 750 hours and BOAC hopes that the engine will be at the 1,000-hour mark when the Comet 4 enters service.

BOAC Has 21 Pilots Ready

The Comet 2E program has enabled BOAC to train 21 pilots (all captains) capable of taking over Comet 4s with the least possible delay as soon as the aircraft are delivered.

the aircraft are delivered.

After the Comet 1 was withdrawn from service, 10 of the Comet 2s ordered by BOAC were diverted to the Royal Air Force's Transport Command. Since June 1956 these aircraft have flown more than 10,300 hours on scheduled services and special flights all over the world.

Since October 1957 the Comet 2s of the RAF have been operated in unpublicized scheduled service across the Atlantic, North America and Pacific to link England with Christmas Island. The 9,737-mile westbound flight takes

25 hours while the 9,552-mile eastbound trip is operated in 20 hours 15 minutes. The RAF Comets fly via Keflavik (westbound only), Goose Bay Offutt AFB, Travis AFB and Honoluh

While Comets of the RAF fly regularly over the Western Hemisphere de Havilland sales representatives are very much present on the ground trying to sell the jet transport to commercial customers. So far they have had little success except for Aerolineas Argentina recent purchase of six Comet 4s. The Argentine airline will use the jets in itially to link Buenos Aires with New York in about 15 hours. Aerolineas expects to put the Comet into service early in 1959.

With the new Argentine purchase the order book shows 19 Comet 4s for BOAC, six for Aerolineas Argentinas and six Comet 4Bs for British European Airways

The production program of & Havilland is naturally affected by the lack of orders and the output could is increased considerably if new contracts were received. At the moment one Comet a month is being produced at the main Hatfield plant and one a month at the subsidiary Chester facility.

De Havilland Has Confidence

There is an abundance of cofidence at de Havilland that the Comet 4 will regain for the British manufacturer the prestige it lost with the disasters involving the early-mode Comet. The completely strengthened airframe of the Comet 4 has been given a life of 30,000 hours.

The Comet 4 is indeed a very different aircraft from the Comet 1, structurally, systems-wise and in appearance. The lengthening of the fuelage has made it a far more beautiful airplane than was the original de Havilland design. It is, of course, much bigger; gross weight is 156,000 lbs.

The four 10,500-lb. Avon RA 29 engines (with noise suppressors and reverse-thrust units) give the Comet 4 a cruising speed of 510 mph. Normal 42,000 ft. With a payload of 56 first-class passengers and 8,400 lbs. of freight, and with fuel reserves for climb, descent, stand-off and diversion, the Comet 4 can fly 3,000 miles in still air.

Production of the Comet 4, of the basis of present orders, will end next year, and then de Havilland will concentrate on building the Comet 4B, which can carry up to 100 passengers on routes of 300 to 1,500 miles.

After the Comet comes the DH 121, the three-engine jet ordered by British European Airways. Sales of this aircraft to other airlines will depend to a large extent on the success of failure of the Comet 4 series.

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Ban on Immigrant Traffic In U.S. Stirs Criticism

A ban on en route immigrant travel through the United States by Canadian immigration authorities went into effect this month to the distress of most U.S. overseas air and shipping lines

The State Dept. asked the Canadian government to remove the restriction nearly two months ago, but as yet no official action has been taken by the Canadians.

Last year, more than 282,000 persons immigrated to Canada from the United Kingdom, Ireland, the Azores, Italy, Greece and Germany. Of this record number, 64,000 traveled to Canada via the the U.S., more than half on U.S. aircraft or ships.

The new rule, announced by the Canadian Immigration service late in March, requires that prospective immigrants travel directly to Canada. With few exceptions, Canadian consulates overseas may not issue an immigrant visa until evidence is presented that the immigrant will take a direct route.

Explanation for the ban's establishment given by Canadian officials was based on administrative problems and non-immigrant traveler inconvenience, the result of congestion at border railway stations where immigrant processing facilities are inadequate. An unofficial explanation was the loss in revenues to the Port of Halifax and the Canadian railways of nearly \$2.5 million in business last year.

Still another side to the story is seen by many in the effect the action may have on future U.S.-Canada bilateral air agreements. These agreements, which provide for reciprocal traffic rights for air carriers of the two countries, are reviewed periodically. Although State Dept. is silent on the subject right now, it is generally known that the Canadian government is in favor of reopening bilateral talks and probably would seek a route between Canadian cities and Miami for Trans Canada Air Lines. It would also like traffic rights between New York/Chicago and European cities.

Principle upon which the U.S. lines and the State Dept. base their 48, objection is the belief of many Western countries that international travel should be as unrestricted and uncom-DH plicated as possible.

Although a restriction against discriminatory practices in the application of immigration regulations is writs of len into the current U.S.-Canada bilateral air agreement, it would have to be stretched somewhat to cover this situation.

U.S. objections stem from the feeling that such restrictions are dangerous because other nations may be encouraged to adopt restrictive measures for use as negotiating tools in their quest for additional air routes.

Florida Nonstop Rights Recommended for NWA

Twin Cities-Florida nonstop rights for Northwest Airlines have been recommended by CAB Examiner James S. Keith.

New route authority for Capital, Eastern and United were also favored by Keith in his recommendations in the Chicago-Milwaukee-Twin Cities Case. The examiner said:

Northwest should be allowed to operate nonstop between the Twin Cities and Milwaukee, on the one hand, and Atlanta, Tampa/St. Petersburg/Clearwater and Miami, on the other. NWA has already been extended from Chicago to Florida in the Great Lakes-Southeast Service Case decision.

Capital's route 14 should be extended from Chicago to Twin Cities via Milwaukee. A restriction in Capital's certificate which only allows it to serve Twin Cities and Milwaukee on flights originating or terminating at Detroit or points south or east would be lifted.

Eastern's route 10 should be extended from Chicago to Twin Cities via Milwaukee. This would make possible first one-plane-carrier service between Twin Cities and Milwaukee and such points as Louisville, Indianapolis and Cincinnati.

A restriction would require that service north of Chicago be rendered only on flights originating or terminating as far south as Nashville on route 10 and Roanoke on route 6, and which serve at least two intermediates north of Nashville and Roanoke, exclusive of Chicago.

A United restriction, preventing it from serving Milwaukee on flights serving Chicago, should be eliminated.

Maytag to Revamp Frontier Airlines Board

L. B. Maytag, who recently bought controlling interest in Frontier Airlines, will become chairman of the board and intends to replace four members of the present board.

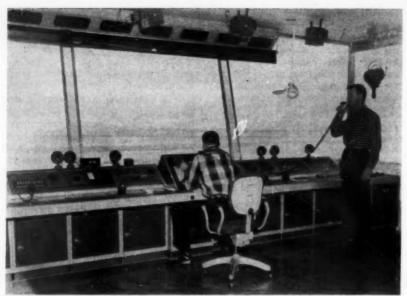
He told AMERICAN AVIATION that replacements will be sought for present board chairman Ben Regan, A. J. Frank and E. N. Levin, all of Chicago, and Joe Wagner, of Dallas. The positions will be filled by persons from cities on Frontier's system. Frank, Levin and Regan sold their stock to Maytag.



LAA to Get Big Multi-Engine Copter

Artist's concept of Los Angeles Airways' Mark III helicopter is described by company's president, Clarence Belinn, as "the forerunner of large multi-engine transport helicopters" for Los Angeles helicopter carrier. This machine can be described as having a gross weight of 16,500 lbs.; a capacity of 23 passengers or 4,375 lbs. of cargo, and a cruising speed of 132 mph.

In its recent annual report, Los Angeles Airways told shareholders it had made commitments for five multiturbine-powered helicopters capable of carrying more than 20 passengers for delivery late in 1960. Belinn said he could not identify the craft because the military model is still on the classified list. (Ed. note: Belinn obviously refers to Sikorsky S-61 now under security wraps by Navy.)



FUNCTIONAL DESIGN of new Emcor Modular Enclosure System is apparent in the above view of an installation in the tower at Natrona County Airport near Jasper, Wyo. Operators are Robert V. Bruce (left) and James A. McCoy, both of Jasper.

CAA Installs New Control Consoles

Civil Aeronautics Administration's Fourth Region, headquartered in Los Angeles, is installing a new-type control console in all new or remodeled airport traffic control towers in its 11state area.

Called Emcor Modular Enclosure System, one unit has been installed in the control tower at the Natrona County Airport near Jasper, Wyo., and 10 more sets are on order.

The new console is engineered to place all equipment used in handling aircraft arrivals and departures within easy reach of the operators. Included are all dials and switches for radio transmitters, intercoms, telephones, weather instruments, runway lights, signals for emergency standby and instrument-landing-system indicators.

The consoles are long, desk-high units topped by slanted turrets along their entire length. The turrets house all indicators and controls, while the lower area forms a spacious, fullength work desk. An important feature of the installed unit is its low silhouette, presenting unobstructed view by the operators of airport traffic.

Installation is accomplished by joining pre-formed frames and panels, much in the manner of building blocks. An infinite variety of plans can be worked out with the panels and in every case the result is an integrated, interconnected enclosure.

The console is called the industry's first complete modular enclosure system by its developers, Elgin Metalformers Corp., Elgin, Ill. Basic plan of

the system is in wide use in the missile, instrument and automation industries for enclosing electronic controls.

CAA engineers give several reasons why the new system will promote efficiency and reduce costs in traffic control.

Because the entire unit is constructed of stressed metal, they say, maintenance cost will be practically nil.

Old-style consoles now in use are custom-made from plywood, with high initial and replacement costs. Also, they say, the new metal units can be changed quickly to meet any requirements, such as replacement of defective equipment or for expansion.

Engineer J. W. W. Tunis, of Los Angeles, who suggested the adoption of the system, said that the system's neat and functional appearance helped it win CAA acceptance. Tunis said that this goes much further than just appearance, since the fronts, backs and tops of all Emcor units are readily removable for quick repair or replacement of malfunctioning components.

CAA has no plans to install this equipment in any other regions, but a spokesman said the system will be evaluated to determine its acceptability as a nationwide system.

-Correction-

American Airlines has ordered 40 ground power units built by Motor Generator Corp., Hobart Bros. affiliate, Troy, Ohio, not 150, as reported in American Aviation, May 5, p. 44.

May 13 Situation Report:

General Passenger Fare Investigation

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Witnesses from United Airlines are on the stand. Frequent legal clashes have marked the past few days of hearings. ("I object to the use of these formal objections as a forum for casting aspersions upon the evidence adduced by the carriers in this hearing," said counsel for United at one point on May 9. "I think it is a very despicable approach.")

Ahead

then Western Air Lines and the local service carriers. Following this there will be a recess of a month or more and, lastly, the government's own witnesses. The pace will have to quicken appreciably if the hearing phase is to end before August 1.

Behind

cross-examination of TWA and United witnesses. Also a decision by the CAB to overrule Examiner Wiser and permit a four-week recess between the presentations of the airlines and that of the government. Today is the 112th day of hearings; nearly 11,000 pages of transcript are in the docket; the airconditioning units have been turned on and the hearings drone along towards a final decision by the Board early next year.

BRIEFS

Transport

Iberia, Spanish airline, placed an order for two Douglas DC-8s, with an option for a third. Delivery is scheduled for 1960. Douglas' announced total of DC-8 orders is now 140.

California Eastern Aviation ordered two Lockheed 1049s for July delivery. Price is reported as \$2.2 million each. plus \$1,250,000 for spares.

Aerojet-General received CAA aircraft engine-type certification for its 250-lb. thrust junior JATO solid rocket engine, designed for standby use of aircraft up to 10,000 lbs. gross weight.

American International Airways Inc. has been organized as a CAB Part 45 operator by a group of former Slick Airways employes, mostly pilots. Two DC-4s were leased from Slick for operation out of Brussels, Belgium, to European and Middle East points. Two other former Slick pilots formed California Air Freight Inc., certified as a Part 45 cargo carrier, and leased a Slick C-46 for San Francisco-Burbank airfreight operations.

Airlines Report Executive Salaries

Annual reports of 1957 salaries, other compensation and shareholdings of officers and directors of the following airlines have been filed with the Civil Aeronautics Board. Formerly designated Schedule E reports by the CAB, these are now designated Schedule G-42 reports.

Figures given are salaries unless otherwise stated.

CHICAGO HELICOPTER AIRWAYS

OFFICERS AND DIRECTORS: John S. Gleason, Jr., pres., treas. & dir., \$12,000 salary; C. W. Moore, exec. vp & dir., \$17,500 salary; \$2,500 bonus & indir.; R. B. Kiel, asst. secy-treas., \$10,600 salary; R. S. Angstadt, vp-opns. (19-57*), \$14,000 salary; J. C. Brogan, vp. secy. & dir., \$6,000 salary; NOTE: *Date of assuming position.

EASTERN AIR LINES

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EASTERN AIR LINES

OFFICERS: E. V. Rickenbacker, chm. of board, gen. mgr. & dir., \$50,000 salary, \$900 bonus & indir.; T. F. Armstrong, pres. & dir., \$35,000 salary, \$900 bonus & indir.; T. F. Armstrong, pres. & dir., \$35,000 salary, \$900 bonus & indir.; S. L. Shannon, sr. vp & dir., \$30,000 salary, \$900 bonus & indir.; S. L. Shannon, sr. vp & dir., \$30,000 salary, \$900 bonus & indir.; G. A. Smith, 2d vp, \$20,000 salary; T. E. Creighton, frees. & dir., \$17,500 salary, \$900 bonus & indir.; L. P. Armold, vp, \$22,500 salary; B. T. Soulary, \$900 bonus & indir.; L. P. Armold, vp, \$22,500 salary; S. L. Shannon, \$17,500 salary; W. L. Morrisette, Jr., vp, \$20,000 salary; Jr. R. S. Lipp (2-157°) sast. reas., \$1,000 salary; E. E. Hahn (3-1-57°), sast. reas., \$8,250 salary; C. A. Wallen (2-1-57°), sast. secv., \$8,250 salary; C. A. Wallen (2-1-57°), pp, \$1,000 fee; P. J. Turner, \$400 fee; P. M. Knowlton, \$400 fee; P. J. Turner, \$400 fee; P. M

LOS ANGELES AIRWAYS

OFFICERS AND DIRECTORS: C. M. Belinn, pres. & dir., \$22,500 salary, \$3,500 bonus & indir., \$1,699 expenses; J. T. Kane, treas. & dir., \$10,000 salary, \$1,500 bonus & indir., \$607 expenses; James G. Lombardi, \$150 dir. fee; William C. Jordan, \$150

NATIONAL AIRLINES

NATIONAL AIRLINES

OFFICERS: G. T. Baker, pres. & dir., \$39,000 salary, \$49,810 bonus & indir., \$3,232 expenses; J. C. Frawner, s. v.p. & dir., \$19,500 salary, \$25,325 bonus & indir., \$1,473 expenses; C. E. Banks, esst. v.p. \$16,000 salary, \$42 expenses; W. B. Caldwell (1-7-57*), asst. treas., \$10,799 salary, \$6,065 bonus & indir., \$1,343 expenses; L. W. Dymond, v.p. \$16,000 salary, \$17,508 bonus & indir., \$32 expenses; R. A. Fitzgerald, v.p. \$13,500 salary, \$16,008 bonus & indir., \$2,356 expenses; R. P. Foreman, secy. & dir., \$13,500 salary, \$20,425 bonus & indir., \$2,356 expenses; \$1,500 salary, \$16,500 salary, \$20,425 bonus & indir., \$2,356 expenses; \$2,532 bonus & indir., \$3,128 expenses; R. S. Foreman, secy. & dir., \$13,128 expenses; M. F. Johnston, asst. v.p. \$13,500 salary, \$10,085 bonus & indir., \$3,128 expenses; M. F. Johnston, asst. secy. & asst. treas., \$13,000 salary, \$20,425 bonus & indir., \$1,428 expenses; M. F. Foreman, \$18,723 bonus & indir., \$1,428 expenses; M. F. Foreman, \$1,500 salary, \$12,255 bonus & indir., \$1,428 expenses; \$1, v. \$1,500 salary, \$25,522 bonus & indir., \$1,428 expenses; \$1, v. \$1,500 salary, \$25,522 bonus & indir., \$1,420 expenses; \$1, v. \$1,500 salary, \$25,522 bonus & indir., \$1,420 expenses; \$1, v. \$1,500 salary, \$25,522 bonus & indir., \$1,420 expenses; \$1, v. \$1,500 salary, \$25,522 bonus & indir., \$1,300 salary, \$12,255 bonus & indir., \$1,300 salary, \$12,255 bonus & indir., \$1,300 salary, \$12,255 bonus & indir., \$1,300 salary, \$10,000 sal NOT: *Date of assuming position.

PERS NNS OTHER THAN directors, officers and empliyes who were paid more than \$10,000 for pers hal services during 1957 were: John W. Cross,

Washington, legal services, \$42,219; Scott, McCarthy, Preston, Steel & Gilleland, Miami, legal services, \$14,53; Johns Hopkins Hospital, Baltimore, medical services, \$13,317; Albert E. Blomquest & Associates, New York City, engineering services, \$12,637; Investigators, Inc., N.Y.C., management research services, \$24,591; and Haskins and Sells, Jacksonville, Fla., auditing services, \$12,575.

WESTERN AIR LINES

OFFICERS: Tarrell C. Drinkwater, pres. & director, \$65,600°° solary, \$9,255 expenses; Stanley R. Shatto, vp-opns. & dir., \$38,267°° solary, \$1916 expenses; Marvin W. Landes, vp-serv. & dir., \$30,367° solary, \$130,367° solary, \$130,166 solary, \$1,242 expenses; Arthur F. Kelly, vp soles, \$30,166 solary, \$5,095 expenses; J. Judson Taylor, vp & treas, \$30,166 solary, \$608 expenses. D. F. Renda, vp. legal, \$30,166 solary, \$1,310 expenses; G. C. Brooder, vp, \$22,667 solary, \$5,418 expenses; Charles J. J. Cox, const. & asst. treas., \$22,667 solary, \$598 expenses; and Earnest H.

Brown, esst. secy. & dir. of per., \$15,000 salary, Brown, esst. secy. & Gir. of per., \$15,000 sealory, \$375 expenses.
DIRECTORS: William S. Bartman, \$500 fee; Gordon Y. Billard, \$400 fee, \$1,036 expenses Hugh W. Darling, \$500 fee; Robert E. Driscol, \$400 fee, \$37 expenses; Wilfrod H. Gonyea (7-8-57*), \$300 fee, \$380 expenses; Hector G. Haight, \$600 fee, \$157 expenses; Dr. Donald H. McLaughlin, \$400 fee; \$157 expenses; Dr. Donald H. McLaughlin, \$400 fee; \$157 expenses; Doseph F. Ringland (deceased), \$200 fee; Dudley Swim (4-15-57*), \$400 fee, \$400 expenses; Joseph F. Ringland (deceased), \$200 fee; Dudley Swim (4-15-57*), \$400 fee, \$400 ee; 310 expenses; John M. Wallace, \$500 fee; Alexander Warden, \$400 fee; and Sidney F. Woodbury, \$400 fee, \$20 expenses.
NOTES: *Date of assuming position. ** Includes director's fee.

NOTES: * Date of assuming position. ** Includes director's fee. PERSONS OTHER THAN directors, officers and employes who were paid more than \$10,000 for personal services during 1957 were: Pogue and Neal, Washington, legal \$15,770; Darling, Shattuck and Edmonds, Los Angeles, legal, \$12,514; G. K. Griffin, Wash., and New York City, management consultant, \$13,162; Burke, Kober & Nicoles, Los Angeles, architects, \$10,986; Buchanan and Co., Los Angeles, advertising, \$587,932; Batten, Bartin, Durstine & Osborn, N.Y.C., advertising \$338,630, and Smalley, Levitt and Smith, Los Angeles, advertising, \$14,252.



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Simmonds packages three types of PACITRON Fuel Gage systems, custom-built for every requirement: the new 2-unit transistorized gage, the well-known 2-unit vacuum tube gage, and the lightweight 3-unit system. Along with dependable fuel measurement, ALL PACITRON systems provide important fuel management functions such as Center of Gravity Control, Level Switching, Totalization, Telemetering and Load Limit Control. All systems meet MIL specs.

Complete information on all the above systems is available on request.

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EW PRODUCTS



Pilot-Copilot Seat

Produced by Burns Aero Seat for Electra Propjet and Jetstar transports, this pilot/copilot seat incorporates a number of new design features. Among these are infinite position elevation and recline, port/starboard as well as fore/ aft movement on tracks, new type adiustable armrests and cushion contour comfort with trim/finish upholstery techniques generally found only in business-executive type passenger seats. All strength and load factors are designed to applicable CAA TSO C39 require-

Circle No. 113 on Reader Service Card.

Astra Indicator

Lear. Inc. Astra indicator displays information on aircraft attitude, steering, turn rate and azimuth. The new instrument features a separate amplifier package, which may be remotely installed and cable-connected.

The instrument is sensitive within one-quarter degree and has a follow-up rate of 300° per second. Total weight is less than 9 lbs. The sphere-life instrument is internally lighted with standard "aviation red" lights. "Wedge lighting" is used to avoid illusion that the sphere is floating in the dark.

Circle No. 110 on Render Service Card.

Hi-Temp Plastic

High-temperature, transparent plastic developed by the Sierracin Corp. maintains contour stability under surface temperatures to 300°F. Named 880, the plastic has a cast polyester base and is thermosetting.

It is suitable for aircraft, electronic, chemical or industrial applications needing a stable, transparent glazing material. Proposed uses include canopies, windshields, crew windows, inspection windows and illuminated warning signs for passengers.

Circle No. 101 on Reader Service Card.

Brake Adjuster

Compound brake adjuster offered by Hydra-Power Corp. is said to have unusual approach to the wheel-brake clearance problem. The adjuster works on a volume principle and maintains established clearance regardless of brake wear, thereby providing against thermal effects tending to change wheelbrake clearance.

Also featured in the device is continuous bleeding of entrapped air directly to reservoir. Although designed for 1,500 psi, the brake will operate at higher pressures.

Circle No. 102 on Reader Service Card.

Navigation Stop-Watch

A navigation stop-watch, model 421 by The Wakmann Watch Co., Inc., measures one revolution in ten seconds, and records up to ten minutes in tensecond divisions. Called type A-8 ground speed navigation stop-watch, the timer will meet extreme atmospheric conditions, temperatures and



A unique Life-saving device. STANDARD EQUIPMENT with the World's leading Airlines and Military Transport Services.

Completely closed in, spray proof ventilation system, protects against cold, waves and spray. Inflates from a CO2 cylinder. Cover in the new daylight fluorescent blaze range.

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regulation tests set forth in Militan Specification MIL-W-6510. The dia features white markings on a black background.

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Hydraulic Pumps

High-pressure and high-speed hydraulic pumps of both fixed and vailable displacement are available from Vickers, Inc. in a complete range of sizes. The 11-cylinder pumps are designed to meet the demand for higher hydraulic flow rates, pressures and retative speeds.

The PF-1110 pump delivers 153 gpm at 6220 rpm, and can be used for 4,000 psi operation with a rated life of 750 hours. Variations of this go to 5,000 psi operation. Design includes high-strength cast aluminum alloy housing with elastomeric seal cover bonding. Circle No. 104 on Reader Service Carl.

Relief Valves

Inline relief valves designed to met high performance requirements of preent aircraft systems are being marketel by **Arkwin Industries**, **Inc.** Qualified to meet MIL-V-5523B, the hydraulic valves have been tested as far as 275°F. A modification of the valve will operate at 650°F without a dynamic elastomer.

The valves have built-in dash-pot to prevent instability. It is a high gain, high bulk, modulus relief valve which is temperature-compensated to cut down oil temperature variation effects. Circle No. 105 on Reader Service Carl

Blower Unit

Aircraft blower-unit announced by The Torrington Mfg. Co., has been designed for high-speed, high-temperature aircraft operation not possible in previous blowers of the same size. Units deliver 175 cfm of air against operating pressures of -75° to 160°F. Uses for the units include electronic equipment cooling, cabin pressurizing and windshield defrosting.

A totally enclosed 1.2-hp aircraft motor operates with a 4-pin type connector to 11,000 rpm on a 200-volt, 400-cps system. Weight is 8 lbs. Circle No. 106 on Reader Service Carl

Hi-Temp Hydraulic Pump

A high-temperature hydraulic pump, designed for ambient temperatures to 700°F, is being marketed by The New York Air Brake Co. Constructed of stainless steel and special alloy, the pump can be used in advanced aircraft and missiles.

Designated 69W030, the pump delivers 3 gals. per min. at 450°F, and is produced at the company's Watertown Div.

Circle No. 107 on Reader Service Card.

Solenoid Shutoff Valve

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A pilot-operated solenoid shutoff valve for aircraft and missile air or nitrogen systems is offered by M. C. Mfg. Co. The MC 3720 has actuation time from its normal closed position of 70 milliseconds.

The 1.1-lb. valve operates at 200 psi with internal leakage of 4 cc per hour in temperatures ranging from -65°F to 165°F.

Circle No. 108 on Reader Service Card.

High-Pressure Check Valve

Randall Engrg. Corp. has announced a high-pressure check valve which satisfies specification Mil-C-5524-A. Randall claims the valve's unique seat design provides maximum long-period reliability, with no leakage from 1 psi to top operating pressures.

The valve is designed for use with oils, especially fire-resistant hydraulic oils and special fluids and gases. It comes in corrosion-resistant steel or aluminum alloy, at what is said to be low unit cost.

Circle No. 110 on Reader Service Card.

Transistorized Power

A series of transistorized, voltageregulated power supplies has been developed by Western Gear Corp. One unit in the series, the 7PVR14, operates from a 115-volt, 60-cycle ac power source, providing three channel outputs.

Channels are regulated to plus or minus .5%, and regulatory circuits are referenced to temperature-compensated Zener diodes. Vernier output voltage adjustments are provided. The units are available in wide output-voltage ranges. Circle No. 109 on Reader Service Card.

Gas-power Tractor

A small gas-powered tractor for moving business aircraft with tricycle landing gear is in production at Aero Vector Corp. Weighing 120 lbs., the tractor has a rated lift capacity of 1,000 lbs., can lift the nose of a plane 9" to lower the tail, and moves at speeds of one-quarter to three mph, forward or reverse.

The tractor is $40x20\frac{1}{2}$ ", is powered by a Briggs & Stratton 134-hp engine and derives lift from a 1½-ton hydraulic jack. Drive is chain-and-sprocket, with spring-loaded control for automatic return to neutral.

Circle No. 111 on Reader Service Card.

Valve for Oxygen Masks

Supplemental and first-aid oxygen is supplied to constant-flow masks for jet transport passengers by a miniature valve designed by Scott Aviation Corp. The flow-selector valve operates through

emergency oxygen plumbing systems to 50 psi and weighs .08 lb.

Outlet flows and inlet pressures may be regulated manually by a tenite-finished finger-tip lever. It is available with a clip on the lever for actuation by mask hose upon automatic presentation of masks.

Circle No. 112 on Reader Service Card.

Balancing Machine

A vertical dynamic balancing machine is announced by **Tinius Olsen Testing Machine Co.,** Willow Grove.
Pa. Company says machine measures 9
ft. x 6½ ft. x 14 ft. high and can

accommodate jet engine components up to 55" in diameter, 90" in length and weighing up to 1,000 lbs. Part under test is enclosed in a cylindrical shroud for protection and is rotated at 750 rpm by a 20-hp motor.

Manufacturer says parts can be balanced to within .0000145 in. displacement at the bearings. Amount and angle of unbalance are determined by means of a sensitive electrical compensating system. Since parts are balanced vertically, loose-fitting blades in turbine or compressor stages do not effect unbalance readings.

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Alertness and hard work propel SAC salesmen in endless personal calls on accounts and prospects from Salt Lake to St. Louis and from Brigham to Brownsville.

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WEST COAST TALK

by Fred S. Hunter

Gold Anodizing Beginning to Pay Off for Anadite; Weight is Main Problem in Building Seats

This issue features interior furnishings in aircraft, so it is up to us to say something about interior furnishings. But first we must apologize to Telecomputing Corp. A recent column reported that Telecomputing Corp. had acquired a 77-acre site for a consolidated facility in the "San Francisco Valley." It should, of course, have read "San Fernando Valley." We wrote it San Fernando Valley, our highly efficient Miss Mary Murphy typed it San Fernando Valley, but the printer-probably a Giant fan with his mind occupied by thoughts of Willie Mays or Johnny Antonelli-made it read San Francisco Valley, and that is the way it appeared in the magazine. Much to the delight, we might add, of countless low characters of our acquaintance who seized the opportunity to bombard us with snide remarks about our appalling ignorance of geography. The crowning insult came from Douglas Aircraft's Hu Gagos. "No wonder you have trouble getting home nights," he cracked. "You don't even know where you live." As you might surmise, that is where we live-in the San Fernando Valley.

Now for the furnishings. Ever hear of pink gold for an airplane? You will. It will be used in the interior metal finishing of United Air Lines' DC-8s. Looks pretty, too. Anadite, Inc. worked out the color to meet Douglas requirements. Anadite now is able to provide two golds for aircraft. The other is an 18-karat gold first used in the interiors of Eastern Air Lines' Golden Falcons. Gold anodizing is tricky business. Anadite set up a battery of 18 tanks to accomplish the color control to make a true gold anodize possible, when EAL decided gold colors would add class to its new Super Constellations and DC-7Bs. Anadite's \$100,000 investment in this equipment is now paying off. You'll see quite a little gold in the new Douglas DC-8s, Boeing 707s and Lockheed Electras.

TWA is going in for some new interior configurations this year. Its latest comprises a fleet of four Model 1049H Super Constellations which were purchased new from Lockheed solely for economy fare service to Europe.

These airplanes are equipped to carry 103 passengers and incorporate a new lightweight seat developed for this high-density configuration by TECO, Inc. The seat weighs less than 20 pounds per passenger place, fits out on 34 inches and has 14-inch shin clearance. TWA also has recently introduced berths on its Model 1649A JetStreams on the Polar route. A typical trip configuration Europe-bound from Los Angeles these days is two berths, six siesta seats, six first-class seats and 60 economy seats. No tourist.

Some versions of the Douglas DC-8 will have as many as six lavatories. Which reminds us that the grapevine from Seattle has it that the Boeing 707 as well as the Douglas DC-8 will have flush toilets. Seems as though in this jet race neither Boeing nor Douglas is going to let the other fellow get away with a thing.

Napier is studying the feasibility of possible 59-seat and 65-seat configurations for Eland-Convair 340/440 conversions. Napier thinks it may be done and still retain 800 miles range, if escape provisions can be worked out to CAA requirements.

If you mention seats to a local service carrier representative, first thing he will ask is: "What do they weigh?" Then he will consider the comfort aspects. Local carriers, flying shorter trips, do not require plush seat comfort. But weight is a critical problem. So you'll find, generally, that the seats in the new Fairchild F-27s will be even lighter than most coach seats.

The two Alaska carriers which ordered Fairchild F-27 turboprops, Northern Consolidated Air Lines and Wien Alaska Airlines, can't wait to get them. Rolls-Royce guarantees that the Dart engines in the F-27s will start without preheating at 22 degrees below zero. "With the F-27s, we'll be rid of our ignition trouble," beams Ray Petersen, president of Northern Consolidated.

TECO, Inc., which started business in 1949, turned out its 18,624th seat unit the other day.



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CPENINGS AT VOUGHT

STRUCTURES

Structures work at Vought is an interesting combination of research, analysis, design and test—a mixture of practical and theoretical problems. Model tests a wind tunnel and on rocket sleds, together with high-speed digital computation, are used extensively for stress, flutter analysis, and dynamic response calculations.

Engineering Specialist. Requires Ph. D. To conduct R & D in structural and dynamic loads determinations, or to apply advanced mechanics theories to the solution of structural design problems where high temperatures are a prime factor.

Solid State Physicist. Ph. D. preferred, with at least 5 years experience. To assist in studies of: corrosion control; nuclear radiation damage; parts or systems failures for which no causes are apparent basic phenomena of solids leading to new concepts.

Lead Structures Test Engineer. Engineer (M.S. preferred) with 5 years experience in structures or related field covering power controls, hydraulics or hydraulic systems, and control systems. To direct groups of engineers in work on structural aircraft elements, components and complete aircraft, including test work and report writing.

Lead Dynamics Structures Engineer. M.E., A.E., or C.E. with M.S., or B.S. in Engineering with an M.S. in Math. Also, 5 to years experience in dynamics and analysis flutter and vibration, aeroelasticity and missile launching systems, structures design and testing. To direct small group of engineers in dynamic, flutter and vibration tests, and in stress analysis work.

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PEOPLE

Manufacturing





PULVER

CAWREY

W. A. (Dick) Pulver is named chief engr. of Lockheed Aircraft Corp.'s Georgia Div. Pulver has held a number of Lockheed positions since joining the firm in 1936. Most recently he was chief mfg. engr. at the California Div.

Philip G. Cawrey appointed aircraft sales mgr. for western div., Aeroquip Corp. Cawrey will be responsible for mktg. activities in this area.

Roger Farnham will be Washington, D.C. rep. for customer relations dept. of Coleman Engineering Co., Inc. He is former asst. mgr.-military relations for Northrop Aircraft, Inc.

Joseph Mallen succeeds Dr. Barnes McCormick as chief aerodynamics engr. for Vertol Aircraft Co. Mallen is former chief of design analysis. Mc-Cormick will head aeronautical engrg. dept. of Wichita University.

Peter J. Wacks elected asst. vp of Bell Aircraft Corp. Wacks' former position with Bell was asst. to pres.

Harry S. Pack and James N. Davis will head two divisions replacing customer relations division, Vertol Aircraft Corp. Pack will head Vertol's international div., and Davis will direct government operations.

Also at Vertol, T. R. Pierpoint becomes mgr.-military programs dept., and Richard S. Leslie becomes service mgr., reporting to Pack.

Clyde Bishop named mgr., Burbank aviation products branch, Pacific Airmotive Corp. He is former aviation products sales mgr.

Claude H. Smith assumes newlycreated post of dir.-contract management for Aeronautical Div., Minneapolis-Honeywell Regulator Co. He has been with M-H 14 years.

William B. Bergen and Clarence W. Miles elected to board of directors, The Martin Co. Bergen is Martin exec. vp and Miles is gen. counsel with the firm.

RAdm. Ford Newton Taylor, Jr. will direct Washington operations for Fairchild Camera and Instrument Corp. Taylor spent 28 of his 30 years in the Navy as a naval aviator.

Nils Sundstrom and Brig. Gen. Tom C. Rives (USAF, ret.) elected to the board of directors, Aircraft Radio Corp. Sundstrom has been with ARC for 26 years, and Rives comes from General Electric Co.

Frank L. Spencer appointed asst. mgr.-engrg. program development for Waste King Corp's technical products div.

John P. Luby promoted to asst. quality control mgr., Chance Vought Aircraft, Inc. Luby's former title was chief of experimental section.

Transport





FITZGERAL

OPPENLANDER

Joseph H. Fitzgerald is named gen. mgr.-Ozark Air Lines. Fitzgerald has been with Civil Aeronautics Board and Administration for the past 12 years. He will begin work with Ozark June 1.

Robert Oppenlander joins Delta Air Lines as comptroller. Formerly with

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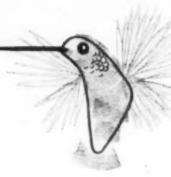
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Harding L. Lawrence elected to Continental Airlines bd. of directors. He is vp for exec. admin. and sales. Harrold W. Bell, Jr., former personnel dir. for Continental, elected vp-personnel. Also at Continental, Marvin L. Davis named asst. vp-sales, E. Bailey Ranes appointed asst. vp-passenger service, Richard G. Schorling named asst. vp-purchasing & properties, Hayden H. Cady named asst. vp and treas, and Frank G. Colnar promoted to asst. vp-budget dir.

Eugene Du Bois becomes reg. mgr.-Eastern Air Lines' New York News Bureau. He was formerly with the Pennsylvania Railroad as public relations mgr. of the New York regional office.

Shepard Spink resigns as American Airlines' vp-merchandising.

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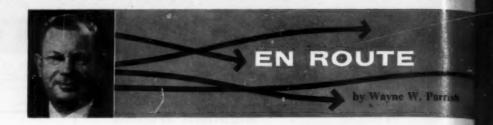
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### A Rough Night, But Nobody Got Hurt

(This is the second of two articles about Ed Murrow's TV visit to our house for his CBS Person-to-Person program.)

ABOUT SIX O'CLOCK in the evening, four and a half hours before the start of the program, the mob of CBS technicians drove off for dinner. Not a soul remained, but the equipment was every where. Doors and windows were wide open. The place was a shambles. Fortu-nately it was the end of a warm, sunny day.

My wife and I grabbed a quick bite to eat in our kitchen and then I decided to shave and change clothes before the men came back. I had to stand on cables in my bathroom to clean up. Then I put on my newly bought blue shirt (blue shirts televise better than white) and a dark suit. By 7:30 p.m. everybody was back and the place started hopping.

First came make-up. apparently has a full-time job of handling these things put a lot of stuff

on our faces to make us televise better.

Then came the job of making us Then came the job of making us into mobile radio stations. If you watched the program you probably wondered how our voices could be heard no matter where we were. Well, we were transmitting. I had a small mike attached to my shirt underneath my tie. It was attached by wire to a battery in one rear pant's pocket and a transmitter in the other pocket, and an antenna stretched down my right leg. They tried the latter inside my trousers but I guess I just spark too much; at any rate, it didn't work that way so it had to hang down the outside.

#### Where does lady hide things?

My wife presented a problem, as do all women on this show. The place for the mike was easy enough, right down the customary front in which women through the ages have been accustomed to hide things when they weren't exhibiting at the same time. But where to place the battery and transmitter? They can be hidden in the rear of a fluffy dress, but not the trim dress my wife was wearing. You guessed it, the two gadgets were hung on one of her legs just above the knee with the wires inside the dress. She was very self-conscious that the gadgets were bulging so much as to be noticeable to the TV audience, but such wasn't the case.

So for several hours we were walking around broadcasting over a special frequency. Everything we said and did was capable of being picked up.

Then began several walk-around re-

hearsals, conducted by Dave Moore with Chuck Hill in the truck monitoring and giving directions. The first go-round was terribly awkward. It was awful. I was sure I'd be a miserable flop. My wife was much better. There was still com-plete chaos in the house with technicians moving around and shouting and mak-

ing changes.

Ed Murrow came onto the circuit at 9:30 and greeted us over the loud-speakers. He could see us but we couldn't see him. He took us over another walkaround and I found his relaxed voice very informal and reassuring. He made a few quips to break the tension and seemed pleased at the general prospect. Everything began tightening up when Murrow took over.

After that go-round there was just a lot of adjusting for sound and loca-tion. Seems that the radiant heat pipes under part of our living room, the metallic flakes in the sofa upholstery and the fluorescent lights in one room caused trouble with our voice volume, but all this got adjusted one way or another. I sneaked away into our pantry, the

only place not occupied, for a couple of fast swigs, and I'm here to testify that the Dew of Scotland saved the day as far as I was concerned. My wife, on the other hand, took a tranquilizer and that worked well for her.

At 10 o'clock somebody said there was a half hour to go and this was the first time we knew we were going on at 10:30 and not 10:45. Up until the



THE ABOVE gives only a slight idea of the CBS equipment on hand. At right on street level is the crane holding up a 90-foot transmitting mast. At left a telephone company truck. In driveway blocking the front door is a CBS truck including generator.

minutes we being asked to do this and do Then I heard somebody say "three i and somebody else told us to take our places and I took a very, very d breath, and said to my wife, "I guess breath, and said to my wife, "I guess the is it, bear up," and in what seemed like seconds we heard Ed Murrow's voice come over the loudspeakers introduct the show—and for the first time learned that Maurice Chevalier was to be the other feature. The bedlam is the house had stopped, all the technician were quiet and alert.

The 121/2 minutes we were on TV went like seconds. I can't even remen what I said. But I kept thinking, Lord, I have to keep going without hitch, let me relax and let me not make a boo-boo." When Ed Murrow had said goodbye and the red lights went of of the cameras in the study and a ted motioned that it was all I sank back in the chair and mopped

#### Something to remember

I don't know whether there six or a dozen cameras throughout th house, but I'll never forget as long a I live a camera sneaking around thro my bathroom and into the door of study for the final scene. It was we have often heard complaints the bright TV lights, but outside of king that there were plenty of bilghts in the house, I wasn't even at of them.

As soon as 11 p.m. came, Ed Murrow came back on the air circuit we chatted for five or ten minutes. said we had done a good job. The t nicians told us the show went off smoothly. All this was good to Then the crews began packing up. 1:30 a.m. every single bit of equipm and wiring was out of the house. E the crane had gone away with the trumitting tower. The mess was cleaned Except for some smudges and scratch there had been no damages.

It took awhile to get our telept re-connected (it was cut off complet for the show) and calls began con in from as far away as Los Angeles, good friend Per Norlin, former p dent of Scandinavian Airlines happened to be in town from Stockh and Bill (SAS) Taylor dropped with a couple of bottles of fine champagne. We celebrated. My wife I got to bed about 2:30 a.m., or was 3. In the morning I woke find the house back to normalcy and preceding night seemed like a Ed Murrow and his crews and ment had come and gone. A truly ing experience.

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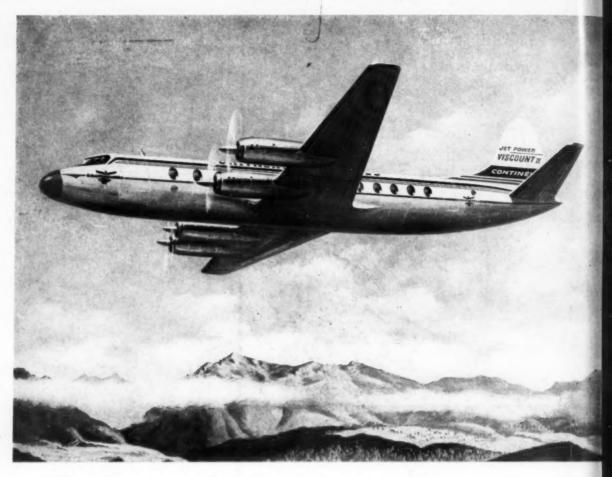
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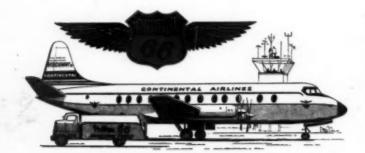
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